15c

The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN

THE WEEK'S NEWS INTERPRETED

Realizing no single Rock Bit design can possibly meet today's exacting demands of the Industry, Hughes Tool Company has developed and proven specific designs —"TAILOR-MADE" for recognized formations, drilling weights and rotary speeds.

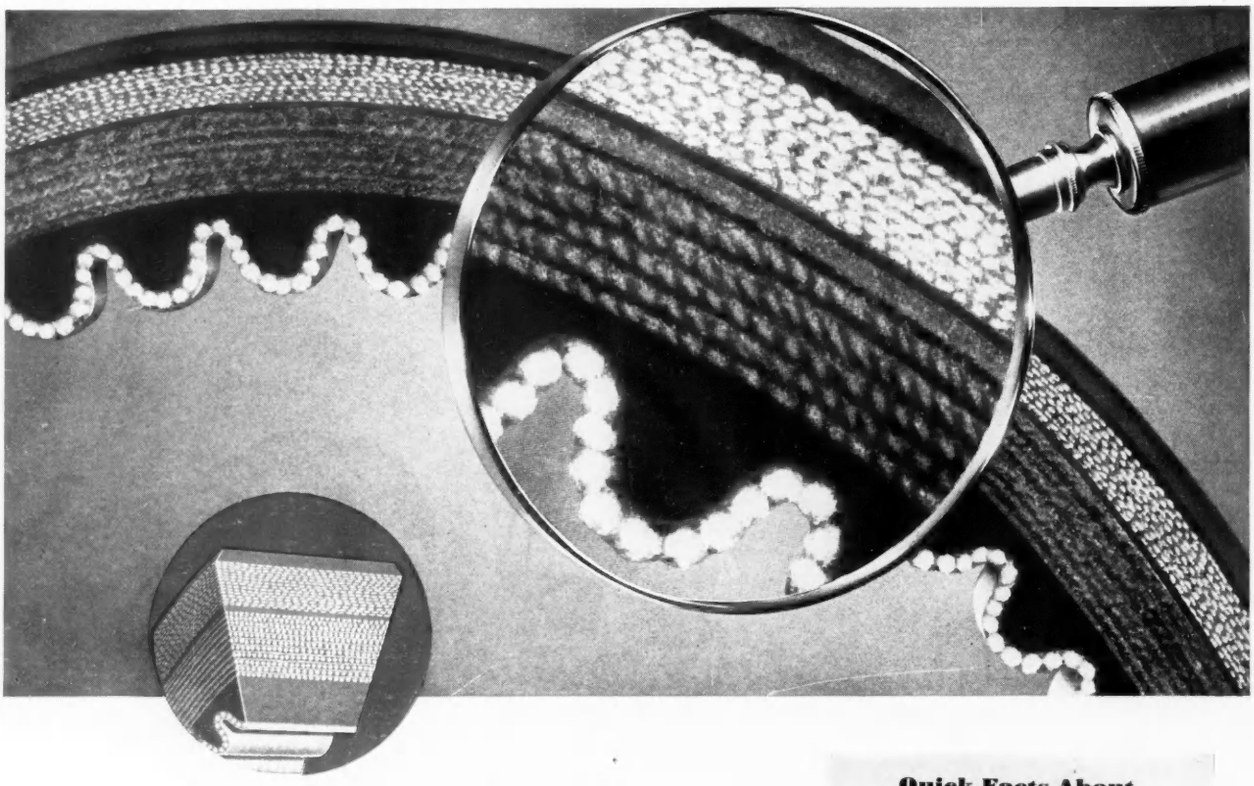
From Broken Formations to Pyrite — there's a "TAILOR-MADE" Hughes Rock Bit especially designed for your drilling problems.

Proven results are: more footage per bit — faster time and a saving of expensive round trips.

HUGHES TOOL COMPANY • HOUSTON, TEXAS • U. S. A.

VOLUME 83 NOVEMBER 9, 1936 NUMBER 9

Greater Gripping Power
with less tension



Die-cut Sides provide another exclusive and important reason for the proved efficiency of Dayton Cog-Belts

A powerful, leech-like grip—less slipping or sliding even with quick starts and stops—less loss of power—less vibration—

—these are some of the many advantages assured by the *die-cut sides* of Dayton Cog-Belts. The raw edges of the die-cut sides contact the sides of the pulley groove and form the driving surface. There's practically no wear. Nor will they ravel. Nor glaze.

Because of this exclusive construction no other V-Belt provides such unfailing gripping qualities—such a steady, uniform flow of power, regardless of speeds—all with less tension, less wear on the bearings.

And in addition to die-cut sides, Dayton Cog-Belts have many other outstanding features. They're the only belts *built to bend*. Because of their cogged inner surface and laminated construction they have far greater flexibility. Even on the smallest pulleys there's no buckling, no distortion, no "squashing" in the pulley groove—*the only V-Belt that combines maximum flexibility with crosswise rigidity.*

And economical, too—cost less to use. They're pre-stretched, so adjustments are seldom necessary. And their *life* is *twice as long* as ordinary belts.

The many advantages of Dayton Cog-Belts are graphically illustrated and clearly explained in our big new Book, "The ABC's of V-Belts." A copy will be sent you upon request. Write today.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO

World's Largest Manufacturers of V-Belts

Manufacturers also of Dayton Fan Belts, Dayton Red Tube Radiator Hose, Dayton Thorobred Tires and Dayco Printers' Rollers

Cog-Belt Drives—F. H. P. V-Belt Drives—V-Flat Drives—Daycoil Oil-Proof V-Belts—Complete Drives, Pulleys and Belts in Stock.

COMPACT • DURABLE • EFFICIENT

Dayton

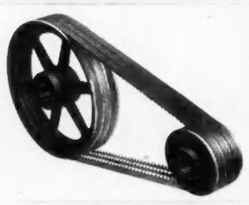
COG-BELT DRIVES

Quick Facts About Dayton Cog-Belt Drives

1. Save floor space.
2. *Built-to-bend* — no distortion—no internal heating.
3. Greater gripping power—no slipping or sliding.
4. Stretch removed—fewer adjustments necessary.
5. No dressing or lubrication.
6. Less tension required—easy on bearings.
7. Longer life—belt replacement costs often cut in half.
8. Quiet—Clean—Rugged.

Complete drives—pulleys and belts—in stock. Fractional to 100 H. P.

DAY-STEEL PULLEYS



Investigate the exceptionally low cost of Dayton Cog-Belts with Day-Steel Pulleys

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $2.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

IS THIS plastered mud HOLDING BACK YOUR OIL?

Not Cleaned With a Baker Rotary Wall Scraper. *The coating of rotary mud prevents the free flow of oil out of the sand and into the hole.*

Remove All Rotary Mud With The BAKER ROTARY WALL SCRAPER

Good plastic and wall-forming qualities in rotary mud offer many advantages while you are drilling. But when it comes time to produce your well, that very mud, plastered over the face of the oil sand, often holds back production, clogs your screen pipe and cheats you out of a large share of the production you should get.

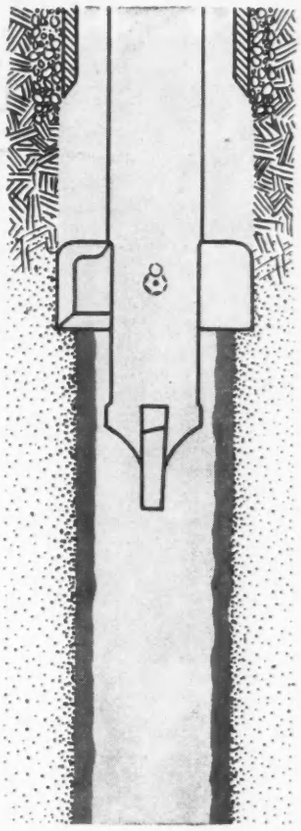
The modern way to assure yourself that your well will be in condition to produce freely is to remove the sheath of rotary mud with a Baker Rotary Wall Scraper—BEFORE PUTTING THE WELL ON PRODUCTION. At the same time you can, if desired, ENLARGE the hole through the oil zone and provide a greater reservoir for the accumulation of oil, and greater clearance for the liner.

The amazing expansion of the blades of the Baker Rotary Wall Scraper enables them to do a thorough job. You can cut to any specified diameter in 1/4-inch steps up to the capacity of the size of tool in use. For instance, a No. 3-A Wall Scraper will run in through 6 5/8-inch casing and scrape to any desired diameter from 6 to 11 inches.

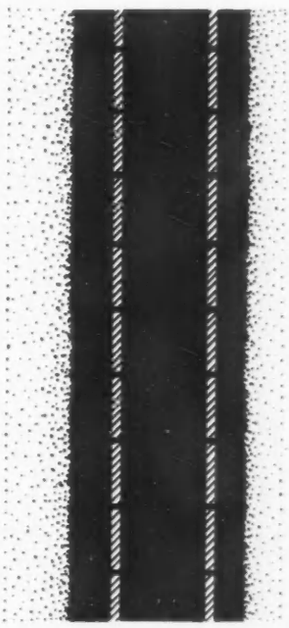
This easy, economical, SAFE method of preparing wells for production has proved so successful that every year more operators, everywhere, are adopting it. Why not try it out yourself?

Always use the BAKER ROTARY WALL SCRAPER to secure these important advantages

- When Underreaming for setting Liners and Casing—allows larger sized liners and casing to be run in easily.
- When Underreaming BEFORE Cementing—gives shoe-point sufficient clearance to permit complete cement distribution and stronger bond with formation, by underreaming last 25 or more feet to bottom; as described above.
- When Correcting Deviations from the Vertical—straightens crooked holes by creating a wide shoulder for NEW start. When Cementing Combination String—enlarges hole opposite section to be cemented—provides excellent condition for successful C. P. job.
- When Cleaning Out Old Wells—enlarges and cleans productive area by wall-scraping to larger diameter.
- When Bottom Water Shut-Off Fails—Wall Scrape to size of original hole or larger (after drilling out old cement)—then re-cement.



This is the way the blades of the Baker Rotary Wall Scraper cut plastered mud from the face of the producing sand and enlarge the hole. Wells that are thoroughly cleaned with the Wall Scraper are put in condition to give a better yield for a longer period because the pores of the sand are opened, and when desired a larger reservoir is provided.



Thoroughly Cleaned with a Baker Rotary Wall Scraper. A CLEAN formation, and LARGE reservoir (when desired) assure the most favorable producing condition.

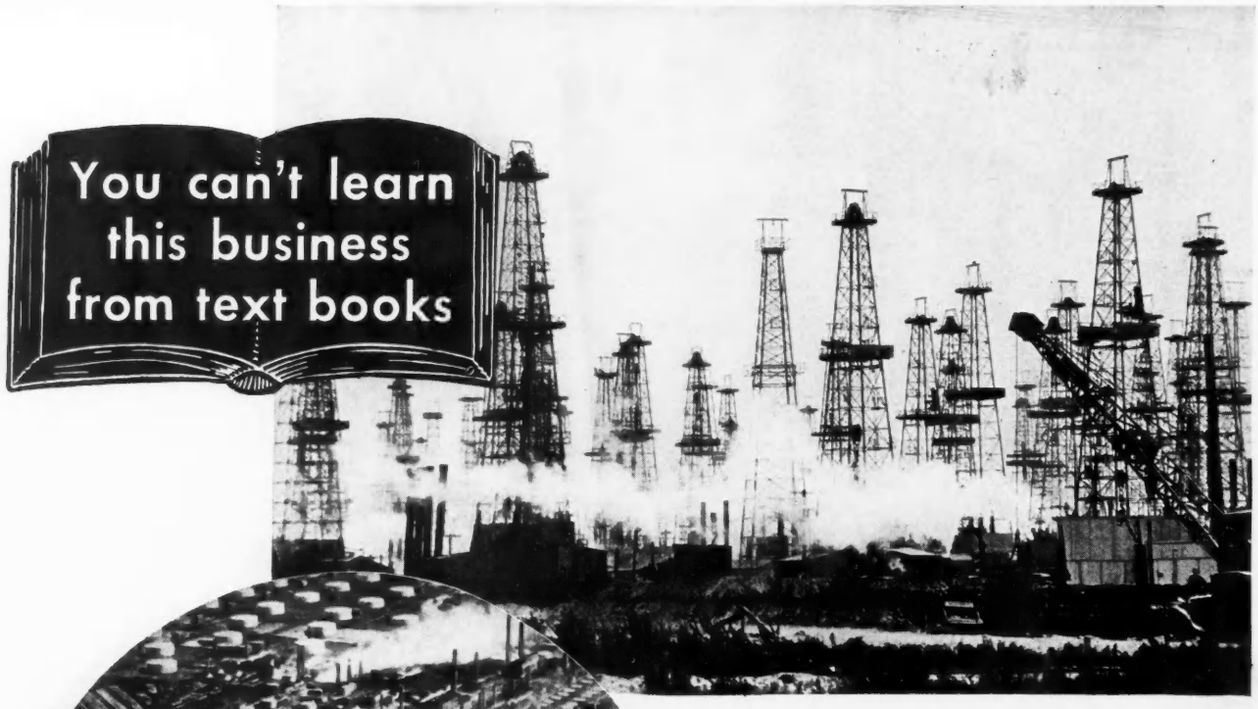
BAKER OIL TOOLS, INC.

POST OFFICE BOX 609, HUNTINGTON PARK CALIFORNIA

COALINGA • TAFT • HOUSTON • OKLAHOMA CITY • TULSA • NEW YORK

See your 1936 COMPOSITE CATALOG for Complete Details

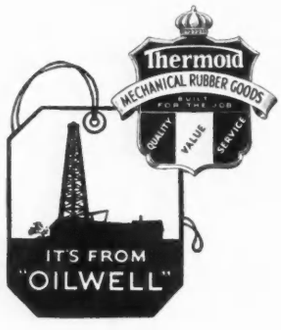
BAKER ROTARY WALL SCRAPER



Thermoid engineers have had to "grow-up" with the Oil Industry

Books aren't much help in learning about the oil business. The only place to learn is right in the field. That's why you'll always find Thermoid engineers studying the industry's needs at first hand wherever there occurs a problem requiring belting, hose, brake linings or packings. And back of these field men stands a corps of laboratory experts ceaselessly developing and improving Thermoid products to anticipate present day needs.

Coupled with this, is Thermoid's determination that every product shall be *right* for its specific application — right in terms of long satisfactory performance. These are the things that have made the Thermoid trademark a symbol of satisfaction. These are the things that have made them the accepted standard of veteran oil men everywhere.



Thermoid

PRODUCTS FOR THE OIL INDUSTRY

Distributed by

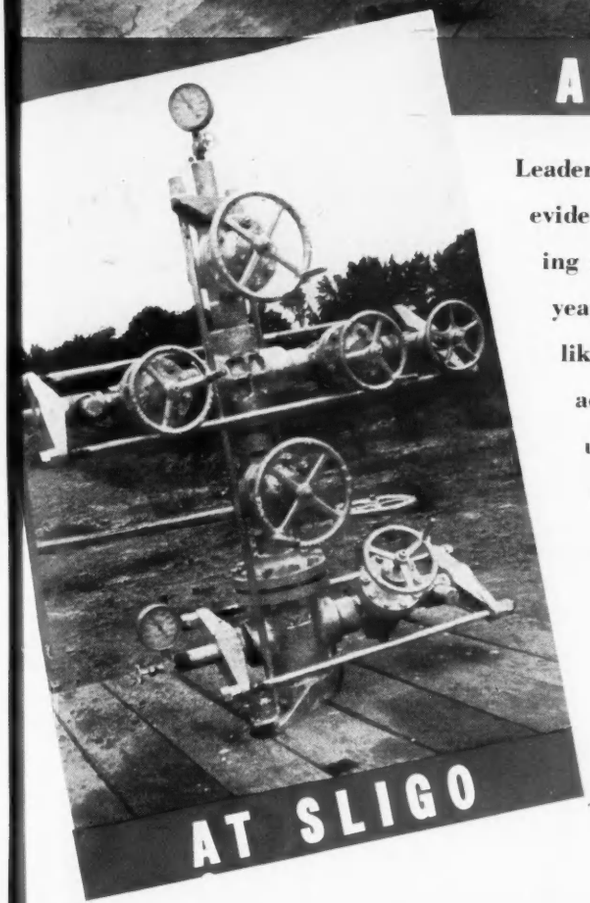
OIL WELL SUPPLY COMPANY

Branch Stores in all Oil Fields

PUMPING AND DRILLING BELTS ▪ BRAKE LININGS AND BRAKE BLOCKS
ROTARY HOSE ▪ AIR, STEAM, WELDING, REFINERY HOSE ▪ PACKINGS

LOUISIANA, TOO, CHOOSES OCT TREES

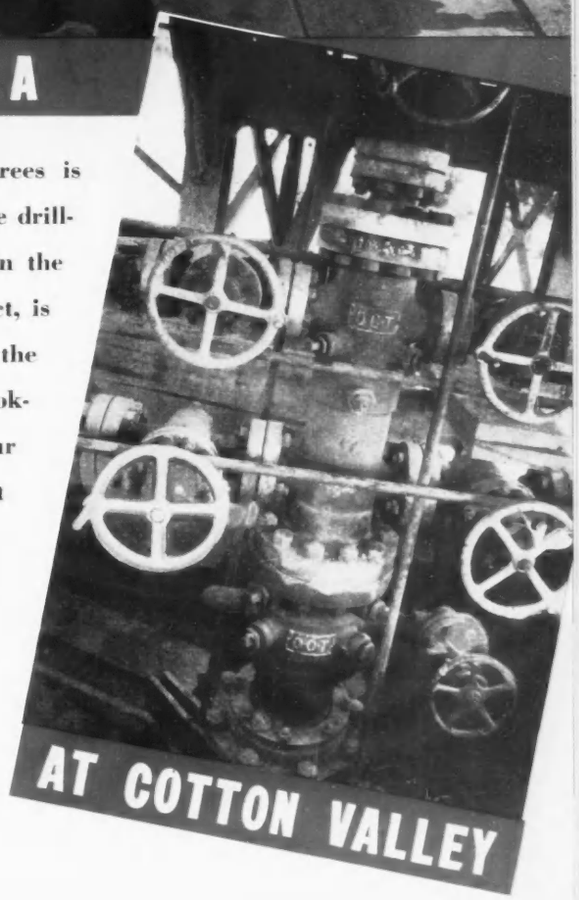
AT RODESSA



AT SLIGO

Leadership of OCT Christmas-trees is evident here in Louisiana, where drilling activity has doubled within the year. Louisiana, in this respect, is like most other oil states, for the advanced design of well hook-ups by OCT has brought our representation throughout the Southwest to a position of unquestioned predominance.

Selling Through Supply Stores



AT COTTON VALLEY

OIL CENTER TOOL CO.

QUALITY O·C·T PRODUCTS

HOUSTON, TEXAS, U.S.A.

CABLE ADDRESS "OCENTOL"

THE LAYNE

Twins

SCREEN

PACKER

The efficient performance of the Layne Screen and Packer has established them as Leaders in their respective fields.

The Wire Wrapped screen allows greater inlet flow with least disruption to the formation. It will give more years of satisfactory service, thereby making it a more economical screen to install.

The Layne Packer has 42 inches of closely woven canvas, spirally wrapped, that compresses to a 20-inch pack of almost iron hardness. The use of a Layne Packer is definite assurance of the end of packing troubles.

Layne and Bowler Co.

HOUSTON, TEXAS

Export:

PETROLEUM MACHINERY CORP.,
30 Rockefeller Plaza,
New York, N. Y.

West Coast:

LAYNE & BOWLER CORP.,
900 Santa Fe Avenue,
Los Angeles, California

BUILT - IN STAMINA

DRILL PIPE

CASING

TUBING

LINE PIPE

Year in and year out, for more than thirty-five years, Youngstown pipe has maintained an unvaryingly high reputation for exceptional endurance. In every type of oil country service the always dependable durability of Youngstown pipe results in minimum maintenance costs.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon and Alloy Steels

General Offices - - - YOUNGSTOWN, OHIO

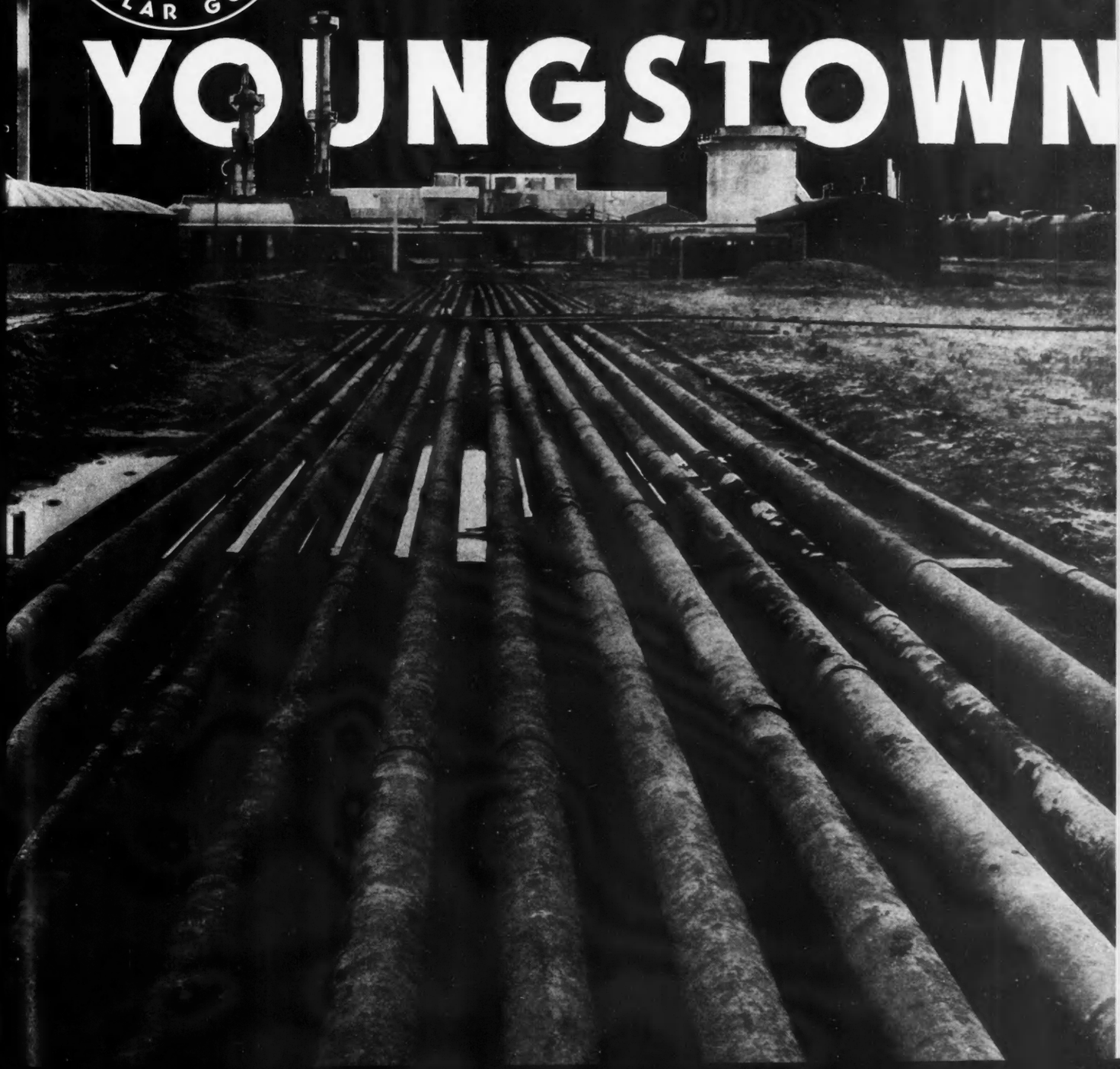
Youngstown's pipe is distributed by—

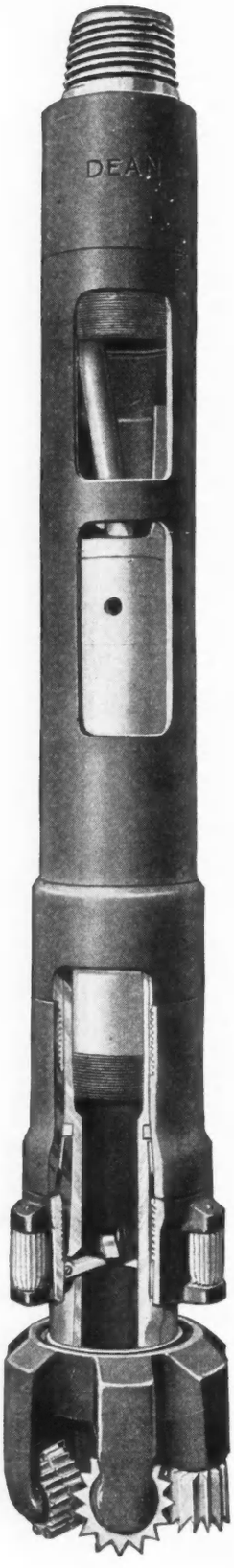
THE CONTINENTAL SUPPLY COMPANY, Dallas, Texas
CONTINENTAL EMSCO CO., INC. 30 Rockefeller Plaza, New York City
REPUBLIC SUPPLY CO. OF CALIFORNIA, Los Angeles
THE YOUNGSTOWN STEEL PRODUCTS CO., Dashwood House, Old Broad Street, London, E. C. 2, England

Sheets; Plates; Tubular Products; Conduit; Tin Plate; Bars; Rods; Wire; Nails; Unions; Tie Plates and Spikes

OIL COUNTRY TUBULAR GOODS
TRADE MARK
YOUNGSTOWN

YOUNGSTOWN

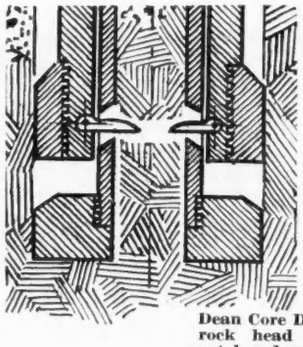




A BETTER WAY
To make a Hard Job
EASY

Actual experience in the toughest fields—Kettleman and Belridge among others—prove *convincingly* that the Dean Core Drill will get an exceptional core no matter how hard the going—and this has consistently held true in the toughest formations encountered in these fields. It is a matter of *record* that the Dean has successfully cored the deepest wells in the world, in several instances after other equipment had utterly failed. It is a matter of *fact* that no formation has yet proved to be beyond the ability of this proved equipment.

Just one among many reasons for its super-performance . . . the Dean patented core catcher that makes it possible for the Dean Core Drill to sever and recover any core that can get into the core chamber. If you have a coring problem on your hands, or desire information concerning "better cores and how to take them," write. We shall be happy to tell you of the advantages enjoyed by drillers now using Dean equipment.



Dean Core Drill with rock head showing catcher dogs in fully closed position, severing and holding the core.

DEAN
OIL TOOL COMPANY

3200 Alameda Blvd., Route No. 2, Box 3200, Compton, California

Mid-Continent Service Agency:

Farris-Cantrell, Inc., 2215 So. Robinson St., Oklahoma City, Oklahoma

'STARCOR' SAVES THE DAY

Provides Safety Factor When Plug-Manifold Leak Holds Up Cementing

IT WAS 200 degrees, 6018 feet down (7" O. D. pipe in 9⅞" hole), in United Gas Company's Stewart No. 3 at Rodessa. Gauge on mud pumps showed 900 lbs., as 10.2 mud was circulated from 4:50 to 5:20 a. m., August 21st.

At 5:25 a. m., 'Starcor' started down the hole. Slurry weights, from 15.4 lbs. to 16.6 lbs., averaged 16.2 lbs. per gal. Thirty minutes later, plug was released and mud pumps started.

Delays Often Happen

Then the unforeseen happened—"one of those things" that so often hold up cementing, in spite of every possible precaution. A plug-manifold union leak developed when the cement was almost all in position. Pumps were stopped and the connection tightened. When the pumps were restarted and the plug finally seated on the collar, pump pressure was only 1050 lbs.

Built-in Safety Factor

There are two ways to avoid stiff slurry in hot holes: One is to use excess water, which means reduced density and decreased strength—the other is to use 'Starcor', the Oil Man's cement with the built-in safety factor against quick-setting.

'Starcor' is specially made for use in deep, hot holes and for resisting mud contamination and sulphate-water action.

'Starcor' sets slowly, even in the hottest holes. But note how quickly it hardens: On August 24th, when plug on this job was drilled out, they found a dense, hard, uniform core—and chemical analysis of cuttings showed complete freedom from mud contamination.

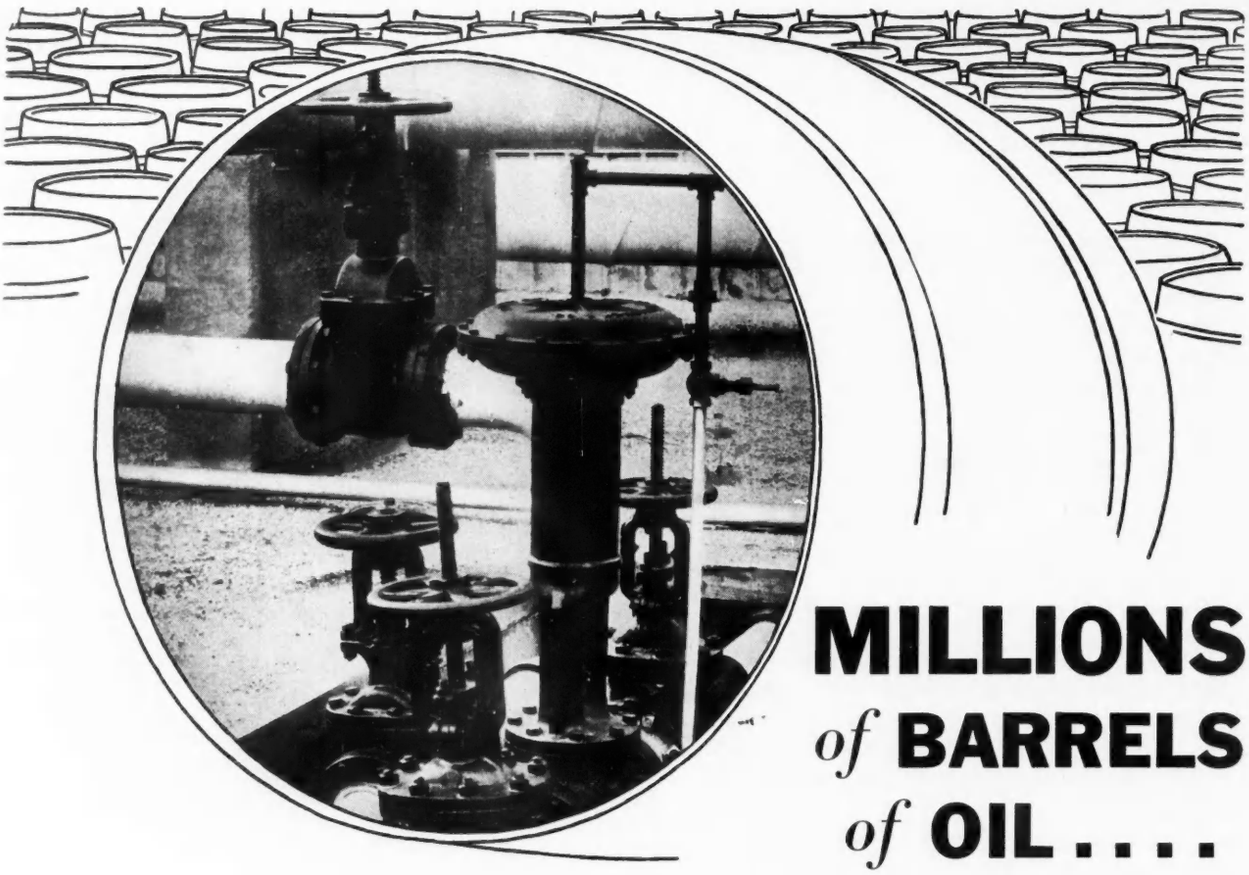
Use 'Starcor' Next Time

'Starcor' is a Portland Cement, specially made for oil men. No adulterants are used, no admixtures are needed. 'Starcor' has all the valued properties of 'Incor' and Lone Star—plus the special qualities needed for deep-hole work. Use 'Starcor'† on your next job—see what a real Oil Man's cement is like. Any Lone Star and 'Incor'* Dealer can supply you, pronto. Lone Star Cement Corporation, Dallas . . . Houston.

*Reg. U. S. Pat. Off. †Pat. Applied For

LONE STAR CEMENT CORPORATION

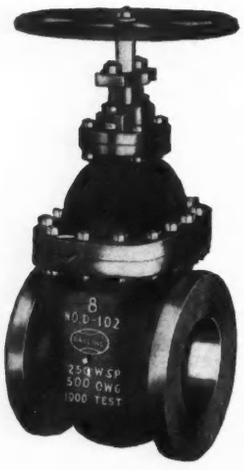
Makers of LONE STAR CEMENT • 'INCOR' 24-HOUR CEMENT • 'STARCOR' CEMENT



MILLIONS *of* BARRELS *of* OIL....

travel from field to refinery through pipe lines controlled by Darling Valves. Millions of cubic feet of gas are distributed to distant points in the same sure, satisfactory and economical manner.

The function of a gate valve is an important function. The selection of the gate valve which best meets the needs of the industry is an *important consideration!*



Today more and more oil operators . . . who believe in *saving the most by buying* the best . . . are using Darling Gate Valves for cross-country pipe lines, high pressure wells, and general field use.

Make *your* next gate valve installation a *Darling installation!*

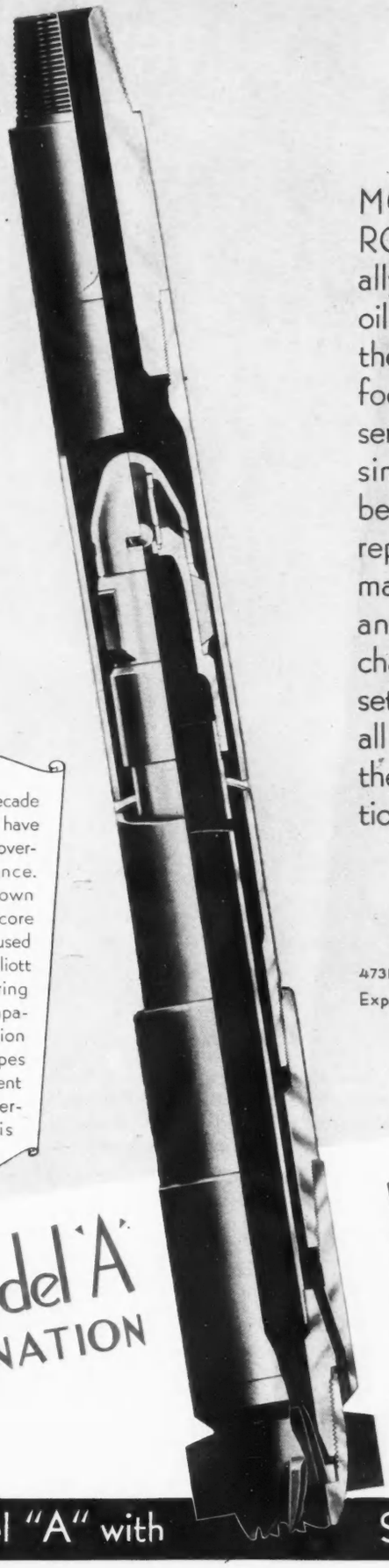
DARLING VALVE & MFG. CO.
Williamsport, Pa.

NEW YORK OKLAHOMA CITY HOUSTON

Mid-Continent Distributors:
International Supply Company
Moorlane Company

California Distributors:
Hickey Pipe & Supply Company
3375 East Slauson Avenue
Los Angeles, Calif.

DARLING
GATE VALVES



THE ELLIOTT MODEL "A" COMBINATION ROTARY CORE DRILL is virtually made to order for operating oil companies . . designed to give the operator maximum recoveries, footage of hole, and dependable service at minimum cost. It is very simple to operate; made of the best quality materials; and when repairs are required they can be made easily and economically in any ordinary field shop. Interchangeable cutter heads make one set of coring equipment ample for all formations from the softest to the hardest. For detailed description, send for Bulletin No. 36-R.

ELLIOTT
CORE DRILLING COMPANY
4731 East 52nd Drive, Los Angeles, California, U. S. A.
Export Office: 420 Lexington Avenue, New York City

For more than a decade Elliott Core Drills have set the pace in recoveries and performance. The Model "A" shown here is the same core drill that is being used continuously by Elliott in its oil well coring service to oil companies in competition with all other types of coring equipment on a price and performance basis

The Model "A" COMBINATION

Elliott

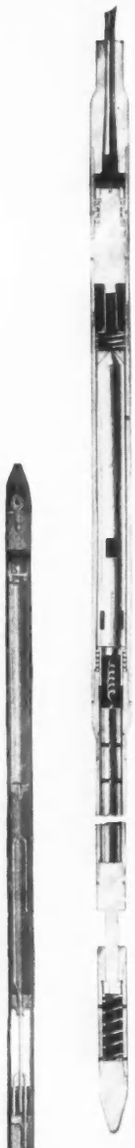
ROTARY CORE DRILL

Elliott Model "A" with Soft Formation Cutter Head

An Open Letter to Every Oil Man

Don't "hope" you're drilling straight... don't "think"... don't "guess"... don't "gamble"

Be Sure *.. with the*



Self Checking **H-K** (HEWITT) (KUSTER) **Clinograph**

Self Checking **SURWEL** GYROSCOPIC CLINOGRAPH

Self Checking **SYFO Clinograph**

"H-K"—designed for open holes only—provides permanent, accurate, photographic records of inclination and direction on paper discs five minutes after removing instrument from hole. (U. S. Patents 1,812,994, 2,027,642 and others pending.)

"SURWEL" provides a map of the well at all depths, prepared from actual photographic records, made while going in and coming out. (U. S. Patents 1,124,068; 1,812,994; 1,898,473; 1,959,141; 1,960,038; 2,006,556; 2,012,138; 2,012,152; 2,012,455; 2,012,456 and others pending.)

"SYFO"—used on a wire line, as a "Go-Devil" inside the drill stem, or on sand or bailing line in open hole—affords quick, inexpensive daily records of vertical deviation in drilling, without the use of dangerous acids. (U. S. Patents 1,962,634; 2,013,875 and others pending.)

SPERRY-SUN WELL SURVEYING COMPANY

1608 Walnut Street, Philadelphia. Pa.

TULSA, OKLAHOMA
425 Petroleum Building

HOUSTON, TEXAS
3118 Blodgett Avenue

LONG BEACH, CALIF.
549 E. Bixby Rd., (3800 Block—Atlantic Ave.)

Get THAT Fish!

You can
DEPEND upon these

Safe-Modern BAASH-ROSS FISHING TOOLS

Too much depends on the successful completion of even the smallest fishing job to take chances. That is why so many operators in active drilling fields throughout the world specify these Baash-Ross SAFE-MODERN fishing tools. They have found through years of experience with them that the tools shown on this page can always be depended upon to do the job safely and economically.

BAASH-ROSS IMPROVED KAMMERDINER ROTARY JAR

Automatic Torque Controlled

The only straight pull jar that is so completely controlled from the surface that the strength of the blow may be varied instantly as circumstances demand. Will deliver 8 blows per minute. An upward strain trips the jar; lowering the fishing string sets the jar for another blow. Operation unaffected by the condition of the hole. Made by Baash-Ross exclusively.

BAASH-ROSS TYPE "B" AUTOLOCK SAFETY JOINT

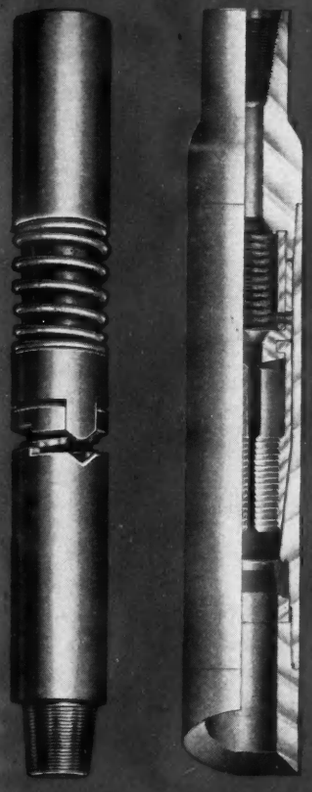
This safety joint is run immediately above all types of fishing tools. Permits all necessary rotation in an unscrewing direction; releases readily at the will of the operator. Heavy driving shoulders transmit the torque in a screwing direction. Will not spiral off from wall friction or turning of the pipe.

BAASH-ROSS ROTARY RELEASING SPEAR

This spear withstands continuous jarring without damage and without bulging the pipe being pulled. Extra long slips are solidly backed up by the flat surfaces on the body in all positions. Slips are automatically equalized—they set evenly, hold the pipe securely and release positively when desired.

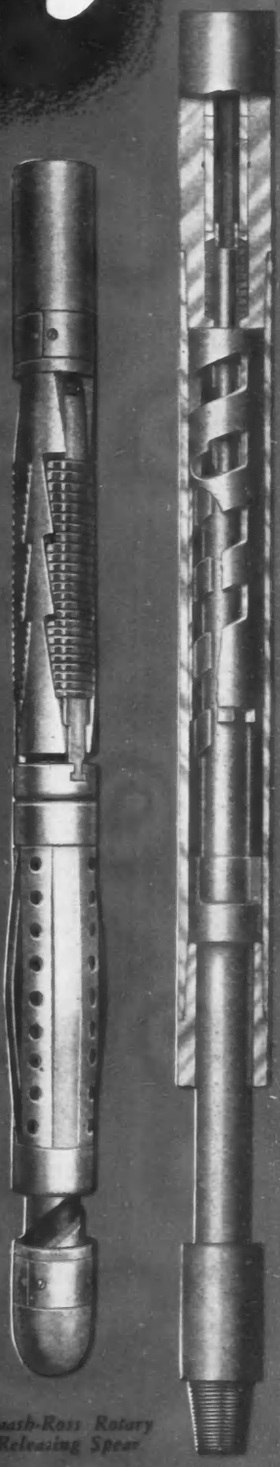
BAASH-ROSS TYPE "B" ROTARY RELEASING SOCKET

Here is another perfect team-mate for the Baash-Ross Rotary Jar. The strong slips act in unison in gripping the fish. All of the slips release positively at the same time if for any reason the fish cannot be pulled. Can be used with packing to circulate the fish loose, or without the packing feature, as desired.



Baash-Ross Type "B" Autolock Safety Joint (Released Position)

Baash-Ross Type "B" Rotary Releasing Socket—Showing Packing



Baash-Ross Rotary Releasing Spear

Cross Section View of Baash-Ross Improved Kammerdiner Rotary Jar—Automatic Torque Controlled. (Jar Shown In Tripped Position.)

Refer to Pages 145, 146, 147 and 148 of your 1936 Composite Catalog for sizes and operating details of the tools shown on this page. All other Baash-Ross products are also illustrated and described.

BAASH-ROSS TOOL COMPANY

Telephone 3-4406	Telephone Fairfax 9363	General Offices	Export Office
1559 S. E. 29th St.	5300 Clinton Drive	5512 Boyle Ave.	30 Church St.
OKLAHOMA CITY	HOUSTON	LOS ANGELES	NEW YORK, N. Y., U. S. A.

Gulf Coast Distributors: NORVELL-WILDER SUPPLY CO.

Run a "SCHLUMBERGER" and be sure!

The Operator who abandons a well as a dry hole before running a Schlumberger test might well be passing up an opportunity of making a profitable producer. Very often, Schlumberger surveys reveal productive formations which neither the driller's log nor the coring indicate. This, together with the ability to distinguish between oil and water, has resulted in paying wells which would have been dry otherwise, in the opening of new producing horizons in fields already discovered, and in the actual discovery of new fields.

Schlumberger Electrical Well Logs provide accurate and thorough information on subsurface conditions. Include them in your regular drilling routine.

SCHLUMBERGER
WELL SURVEYING CORPORATION
HOUSTON, TEXAS U.S.A.
"Electrical Well Logging"

4 OUT OF 5 GULF COAST OIL TOOL MANUFACTURERS CHOOSE TESCO GOOD STEEL CASTINGS

ONCE YOU USE TESCO Steel Castings you'll readily understand why so many oil tool manufacturers in the Gulf Coast are taking advantage of this exclusive steel casting service. Because we do not manufacture finished oil field equipment, we devote our entire effort to the production of the best possible steel for your particular job, in the least possible time. The most modern electric furnaces and automatic control of annealing equipment, supervised by experts who appreciate the demands made on steel in the field, and constant laboratory supervision is your assurance of good steel castings . . . every time.

Write for your copy of "Steel Castings to Fit the Job."

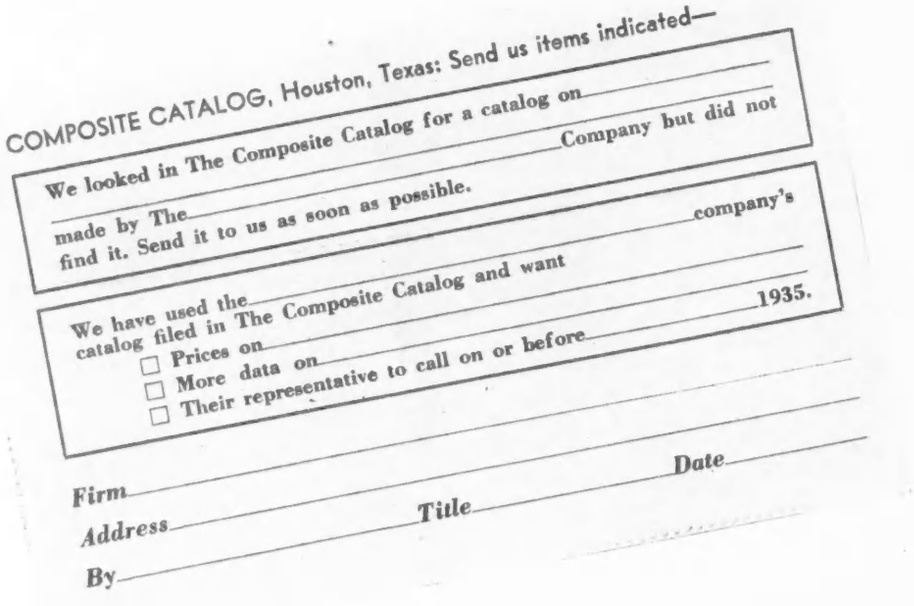
TEXAS ELECTRIC STEEL CASTING CO.

GOOD CASTINGS — CARBON AND TESCO ALLOY STEEL — HOUSTON, TEXAS

Forms closed November 1st for the

1937 COMPOSITE CATALOG

It will be still larger and more complete than the 1936 COMPOSITE CATALOG . . . more companies will be represented and new equipment developed during 1936 will be shown for the first time.



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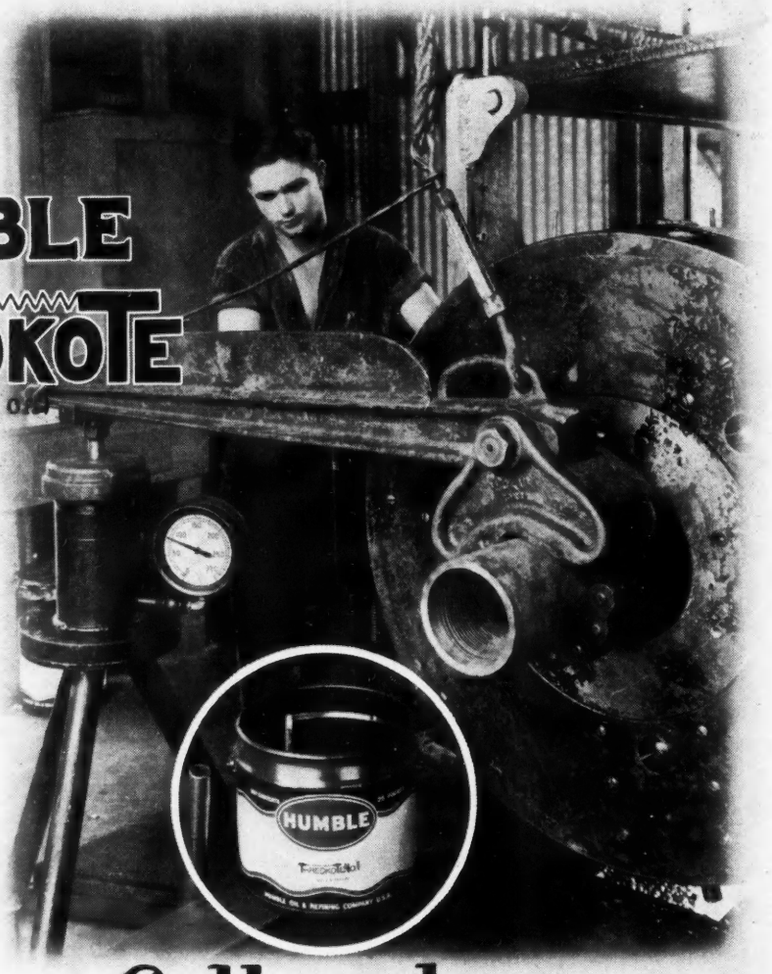

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THE OIL WEEKLY

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Contents « November 9, 1936

Volume 83, Number 9

THIS WEEK 21

GENERAL NEWS:

Legislation Likely—Several Oil Control Bills Expected in Next Congress 22

Conditions Favorable—October Statistics Reveal Heavy Demand Offset Higher Production 24
By J. L. LOGAN

A. P. I. Meeting Opens—Varied Subjects of Wide Appeal Feature of Annual Program 35

Pipe Line News 32

Men in the Industry's News 30

Squeaks from the Bull Wheel 152

ENGINEERING AND TECHNICAL:

The Gulf Coast as a Deep Oil Reserve 46
By BRAD MILLS

Maintenance of Field Gas Testing Equipment 51
By FRANK B. TAYLOR

Economies Being Used in Applying Water Flood Drive to Shoestring Lense Type of Field 54
By FLOYD SWINDELL

Gas-Lift Operations on Cary Lease at Oklahoma City Are Basis for an Interesting Study 66
By S. F. SHAW

Small Rig Powered by Automobile Engine 87
By FRANK B. TAYLOR

Tankage Facilities Serve Two Purposes on South Texas Oil Line 90
By M. D. ALTGELT

MARKETS AND STATISTICS 95

FOREIGN DEVELOPMENTS 100

FIELD DEVELOPMENTS 106

NEW PRODUCTS AND MANUFACTURERS NEWS 149

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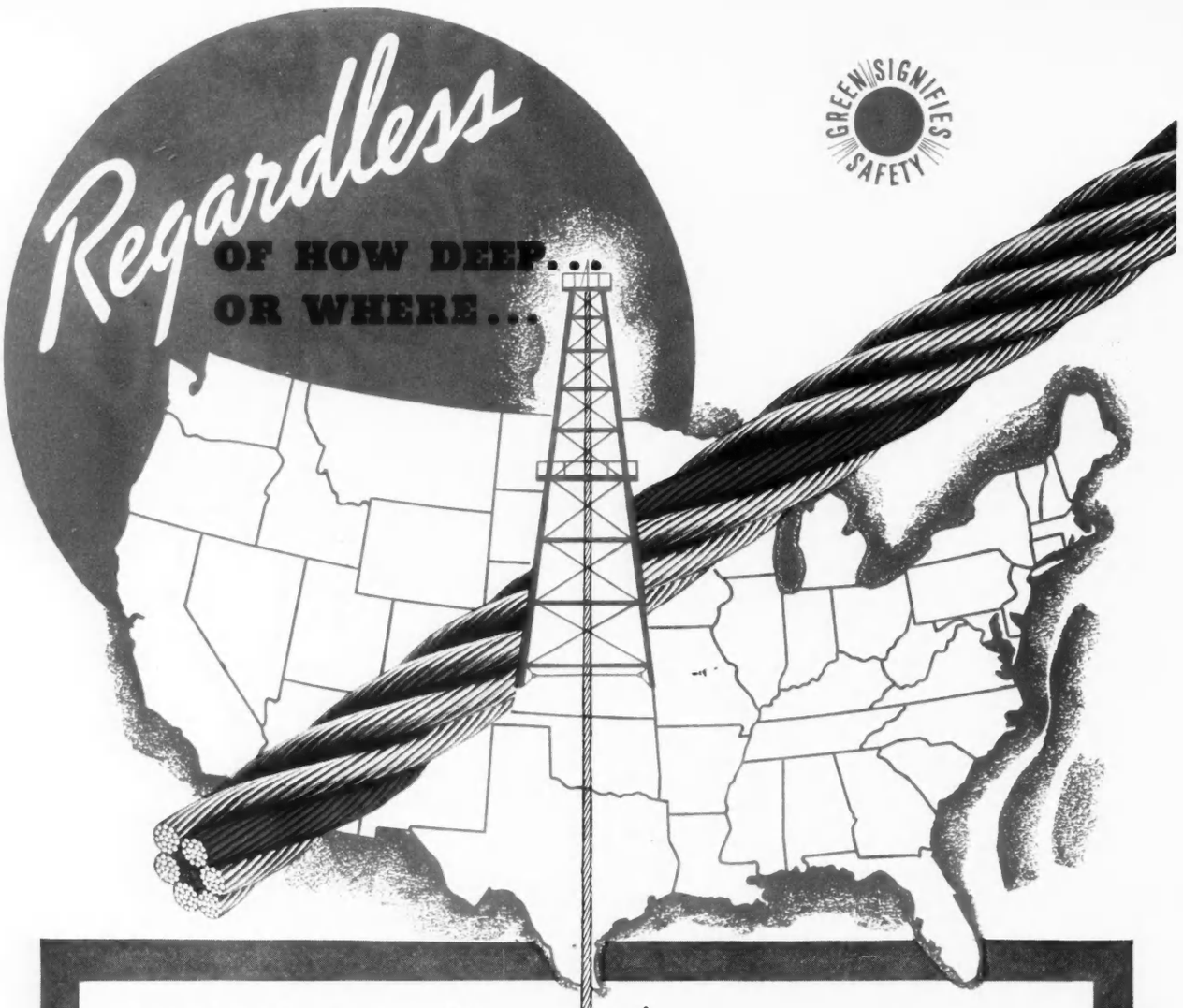

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THE OIL WEEKLY

FOR OIL AND GAS PRODUCERS
AND PIPE LINE MEN

ENGINEERING NEWS STATISTICS

WARREN L. BAKER, Editor

This Week:

THE industry remained in a strong statistical position during October, although crude production exceeded Bureau of Mines recommendations by the largest amount this year. Continuation of a surprisingly heavy demand, however, permitted oil stocks to be reduced to the lowest point in 15 years despite the large production. But, in contrast, gasoline stocks were increased nearly a million barrels. **Page 24.**

SEVERAL oil control bills are expected to be introduced at the next session of Congress, and the possibility of them being enacted has been enhanced materially by results of the national election, which returned President Roosevelt to office by a huge vote and also strengthened the Democratic party in Congress. It is believed the President could get any measure passed, so upon his attitude depends the outcome. Of course, the industry can benefit itself by removing any causes of complaint. **Page 22.**

THE oil industry's largest convention, the annual meeting of the American Petroleum Institute, opened in Chicago today. Already a goodly portion of the 3000 oil men expected to attend had arrived. Economic, legislative and technical problems and trends of the industry will be studied and discussed in a program planned to carry wide and diversified appeal. During the convention numerous offices of the Institute are to be filled by election. **Page 35.**

ALTHOUGH the oil reserves of the Texas-Louisiana Gulf Coast represent about 16 percent of the nation's known future supply, this does not reflect the true potentialities of the coastal belt. The region offers unusual opportunities for development of oil at record depths due to the great thickness of favorable formations, good drilling conditions and probably high percentage of producing structures. From this standpoint the territory ranks foremost among the districts of the world. **Page 46.**

A WATER flood project near Tulsa is of particular interest since it is being applied to a shoestring type lense, sand, which involves problems entirely different from most water flooding operations. Moreover, this particular project is strictly a poor-boy type, but it stands a good chance of paying off. The plan being used is based on the lowest initial investment possible, very low operating costs, and the willingness of the operator to accept additional recovery at a slower rate. **Page 54.**

AN illustration of the large quantity of oil that wells can produce after several years of productive life, if conditions are suitable, is offered by one of the principal Oklahoma City leases, which has been produced by natural flow, gas-lift and combination gas lift-pumping. Costs of operations have been low, despite the years of life and great depth of the wells. Two interesting features are that large production has been obtained although the bottom-hole pressure has been low, and that the pressure has remained unchanged the past six months, despite several unfavorable conditions. **Page 66.**

Next Week:

THE annual meeting of the American Petroleum Institute will be covered thoroughly in our next issue, which will contain the first full news coverage of the convention to be published in any oil trade journal. The election of officers and important actions and discussions will be presented. In addition several of the engineering papers delivered before the Division of Production will be printed.

THE industry has become conscious of the existence of connate water in oil sands. Howard C. Pyle and P. H. Jones, of Union Oil Company of California, will add to the literature and knowledge of the subject by describing quantitative methods used for determining the oil and connate-water content of sands. An investigation by these men showed an average of 38 per cent of the effective pore space of oil sands is occupied by connate water.

GAS-CAP material from the Kettleman Hills field has been obtained in the form of gas and liquid samples, and six different mixtures of them have been studied at a series of pressures and temperatures. The results have included both formation volumes and specific volumes of the mixtures and thermodynamic properties of the gas sample and the liquid sample. Conclusions will indicate that a mixture of the samples in the same proportions as would correspond to the operating gas-oil ratio of the well sampled, when brought to equilibrium at conditions of temperature and pressure comparable to those probably existing in the gas-cap sands, would be substantially in the form of a gas phase.

THAT there is need for further investigation so as to evolve a more correct method of rating derricks so that the derrick's safe load capacities will be commensurate with the strength of the leg sections will be pointed out by S. B. Settle. The paper will review the present practice for determining capacities, record the results of a tests, and show that there is a discrepancy in the existing A. P. I. column formulas.

Legislation Likely

SEVERAL OIL CONTROL BILLS EXPECTED IN NEXT CONGRESS

WASHINGTON, D.C.

FEDERAL regulation, at least partial control, of the oil industry again looms as a possibility as a result of the national elections.

Given a tremendous vote by the American electorate, President Roosevelt is seen in Washington as stronger than ever. Followed into office by a strong majority in Congress, the President is expected to have little difficulty in obtaining such legislation as he deems necessary. Therefore, the likelihood of strict oil control depends largely upon his attitude.

Whether an effort will be made to procure federal control of the whole industry will depend upon the attitude of Congress with respect to the Connally Act and the stand taken by the President. Indications are that the legislation will be introduced early in the session, but that of itself means little since thousands of bills are introduced annually of which nothing further is heard.

It seems probable at the present that if President Roosevelt insisted upon federal control, the legislation would be enacted with little difficulty. The best way of avoiding the possibility of control is for the industry itself to take strong steps to eliminate all causes of complaint, so that if the measure is brought up it can show that the desired end has been achieved already.

The first test of the possibilities of federal control is expected to come early in the coming session of Congress, when an effort is made to continue the Connally contraband oil act, which expires by limitation on June 16, next. This act is designed to support the state production controls, but has been exercised only in Texas through the Federal Tender Board for the East Texas field.

The changes that the President may make in his cabinet, following his inauguration for a second term on January 20, will determine to a large extent the course he will follow with respect to federal control of oil and other matters.

Rumors are rife in Washington that there will be a considerable shake-up in the Cabinet and among the heads of the New Deal agencies. Just what form these changes may take is a matter of speculation. Among the possibilities, however, is an effort on the part of the President to eliminate the friction that has arisen between various officials, including that between Harry Hopkins, head of the Works Progress Administration, and Harold L. Ickes, secretary of the Interior and chief of the Public Works Administration.

Neither Hopkins or Ickes are any too well liked by Congress, but between the two it is believed Congress would prefer to see the former eliminated, feeling it has a measure of control over Secretary Ickes through its command of the purse strings of the Interior Department.

Federal control of the oil industry has been one of Ickes' ambitions, and he has lost no opportunity, since invalidation of the NRA, to tell the industry and the country that only by federal control can permanent stability be attained.

While efforts by Ickes to procure the enactment of oil legislation since the killing of the codes has failed, his lack of success has been due, to a considerable extent, to the attitude of aloofness adopted by President Roosevelt with respect to the matter. The President's thoughts on this matter may or may not be the same in the future.

GAS HEARING

Panhandle wells may be re-classified as result

AUSTIN.

THE Texas Railroad Commission has called a hearing for November 30, at Austin, to determine whether borderline wells in the West Panhandle gas field should be classed as sweet or sour gas wells.

Gas Engineer A. W. Crowell explained that in classifying sour gas wells in the Panhandle, the commission has used the statutory definition of gas containing 1½ grains or more hydrogen sulphide per 100 cubic feet.

Immediately adjacent to the line which defines the sour gas area proper are wells containing less than 1½ grains, but which nevertheless cannot get connections, they say, because their gas is unfit for lighting and heating.

The Railroad Commission has statutory authority to designate wells as sour gas wells if it finds the gas unfit for sweet gas uses.

At the same hearing the commission will continue its study of Moore County wells, in regard to ratios, water exemptions, allowables, and use of dry and casinghead gas.

Coast Geologists

ELECT HARRY R. JOHNSON AS PRESIDENT FOR ENSUING YEAR

LOS ANGELES

THE thirteenth annual meeting of the Pacific Section of the American Association of Petroleum Geologists was held in Los Angeles on November 5 and 6. Several out of state visitors were in attendance, and geologists from all parts of California were at the sessions.

At a business meeting held afternoon of November 6, Harry R. Johnson, consulting geologist of Los Angeles, was elected president of the Pacific Section, and James C. Kimble of the geological department of General Petroleum Corporation, Los Angeles, was elected secretary-treaseurer. Tentative plans were made at this session for the entertainment of the national association meeting in Los Angeles next year.

Officers serving during the past year were: Chester Casel, president; Richard G. Reese, secretary-treasurer, and Harold W. Hoots, Roy M. Barnes and Louis N. Waterfall, district representatives.

A number of technical papers were read and discussed at the various sessions.

Louis E. Kemnitzer, in discussing the geology of San Nicolas Island, California, stated that the rocks there are almost wholly composed of sandstones and shales of middle Eocene age. The submarine contours reflect a major axis with San Nicolas Island a high point on the uplift, and suggest the island is the southeast end of an eroded and faulted anticline.

H. D. Hobson and W. D. Rankin discussed the stratigraphy of the Sespe Creek-Piru Creek area and called attention to the composite columnar ranging in age from Sespe to Pliocene. They made lithologic and paleontologic correlations to tie the various units of the area together.

J. J. Jakosky and H. K. Armstrong told about geoelectric exploration in the Tejon Ranch area of California. They gave detailed explanations of the theory and operating technique of the electrical conductivity method employed and made comparisons with the results of drill holes.

The geology of the eastern half of the San Joaquin Hills, Orange County, was the topic of Francis D. Bode. He declared that with the exception of the Pleistocene terrace deposits, all the sedimentary rocks exposed are Tertiary in age and have a thickness of about 5000 feet. The dip of strata, in his opinion, is due to the action of normal faulting, rather than folding.

Howard C. Pyle described methods used in determining the fluid contents of sands. Results of tests on cores indicate that approximately 38 percent of the pore space of oil that produces clean oil and gas is occupied by connate water.

Geological causes of poor reflection was the subject of Frank Rieber. He stated cut reflection records are obtained only with sharply defined, conformable bedding, of considerable lateral extent, uncomplicated by steep folding or faulting. Deviations from these conditions will give rise to waves returning from the earth from a number of directions at approximately the same time, and produce unsatisfactory reflection records. He presented a method for overcoming such troubles.

Max L. Krueger suggested the same "Sycamore Canyon Formation" be applied for a 3800-foot interval of alternating conglomerates, sands, silts and shales

in the Whittier Hills. This interval has previously been described with the Fernando. Krueger believes the formation deserves a formational rating because it can be identified easily on lithologic grounds alone.

The gas discoveries at Tracy, McDonald Island and Rio Vista have caused interest in the stratigraphy and structure of middle California, and Arthur S. Huey discussed this subject.

Recent stratigraphic studies have permitted the making of some new guesses about land sea distribution and the changes that occurred from time to time between the end of the Cretaceous and the beginning of the Oligocene, Ralph D. Reed told those assembled.

Bruce L. Clark read a paper on "Migration of Oil Fault Zones." L. W. LeRoy discussed "Foraminiferal Foaunule from the Vaqueros Formation in the Simi Valley." The "Geology of the Outfall Sewer Tunnerl, Palos Verde Hills," was the title of a paper by J. R. Schultz. J. Edmund Eaton had a paper on the "Relation of the Type Santa Margarita to the Type Monterey, California." "Geological Prospecting in New Guinea" was presented by W. E. Heater, and Harry R. Johnson talked on "Art Is Long and Time Is Fleeting."

Texas Hearing

NOVEMBER 19 IS SELECTED AS DATE BY COMMISSION

AUSTIN.

THE Texas Railroad Commission has set November 19 as the date for the next statewide proration hearing to be held in Austin. At the last hearing, the entire meeting was given over to a discussion of market demand conditions, and many observers believe that this will be the principal matter before the commission at the November hearing.

Despite the receipt of nominations from purchasers showing that they were willing to buy more than 1,400,000 barrels of oil daily during the month of November, the Railroad Commission chose to follow the recommendation of the United States Bureau of Mines, which allowed only a little more than 1,000,000 barrels to be produced.

Many operators believed that this action indicated a rift between the commissioners, other than that which was known to exist between Commissioners Thompson and Smith. Observers close to the commissioners, however, have been unable to find any difference of opinion between Commissioners Terrell and Thompson that might warrant such a belief.

Reports of this rift have been traced, in some instances, to political enemies of the commission, which has led many to believe that the wish was father to the thought and that the purpose in spreading such rumors was to create the quarrel which these people would like to see take place.

Unless the Bureau of Mines finds that there will be a greater market for oil during the month of December than existed during the month of November it is likely that vigorous protests will be filed at the hearing against allowables now fixed by the commission. It is authentically reported that operators in at least five different fields contemplate the filing of suits attacking commission proration orders. In four of these cases the operators will attempt to prove that their fields should be allowed to produce more oil. In the fifth case, the method of allocation is under attack.

These would-be litigants have delayed their attacks in the hope that higher allowables might be obtained through petitions to the Railroad Commission itself. They hesitate to attack these orders while markets are stable and the price continues to rise. This latter factor may, as a matter of fact, prevent the filing of the suits anticipated.

In the notice of hearing sent out the commission again requested purchasers of Texas crude to file firm nominations indicating their December needs, and also to indicate their probable wants for the succeeding five months. Thus the commission will have at hand demand requirements through the month of May, 1937.

Yates Suit

PRORATION ATTACK BEFORE FEDERAL COURT SOON

AUSTIN

FEDERAL JUDGE R. J. McMILLAN has fixed December 4 as the date when a three-judge court will be convened at San Antonio to hear arguments presented in the suit filed by Ohio Oil Company, attacking certain phases of the proration order in effect in the Yates field, Pecos County.

This suit is probably the most important litigation involving Railroad Commission proration orders that is now on the docket.

The order in the Yates field provides for the distribution of production based on an allowance to each unit plus a potential allowance. This order was the first proration order in Texas and was promulgated in 1928 in accordance with a plan advocated by the operators in that field.

As a result of vacancy suits, several small tracts of land ranging upward from four acres were recovered by the state. These are in the heart of the field and were so leased as to constitute eight tracts upon which a total of nine wells have been drilled.

The units contemplated in the original order as a basis for proration were units of 100 acres. The variation from this was sufficiently small to be disregarded in the distribution of allowables.

As the small state tracts were developed, however, the wells were drilled on leases ranging from four to 25 or 30 acres and the operators of these tracts demanded full unit allowances. This they obtained, even though some of the operators objected, but the situation was aggravated further when an exceedingly large producer was brought in on one of the four acre tracts. Because of the method of allocation, the operator of this four acre tract was permitted to produce from his one well an allowable higher than that of any offsetting tract. Several offsets were drilled, but the largest potential for any of these wells was 3000 barrels daily, which compared very unfavorably with the potential of the well on the small tract, which exceeded 150,000 barrels daily.

Thus through operation of the order, the advantage gained by the small tract could not be eliminated and the owners of these offsetting leases appealed to the commission for relief. This appeal was completed last June, and since that time the commission has issued no order on the evidence presented.

Ohio Oil Company has taken the case to Federal Court, and since the Federal Court is powerless to write a new order, the plaintiff has asked that the present order be set aside in the hope that a new order will be written that coincides with its view of the situation.

Owners of small leases, on the other hand, point out that they took a vast risk when they drilled their wells because the field had already been producing for several years and they had no reason to anticipate the large wells which resulted.

Having taken this risk and having benefited, they insist that they are entitled to the advantage which they were fortunate enough to obtain.

KANSAS POTENTIAL UP

Highest mark in history of state is reached

WICHITA

ACCORDING to a report filed by T. A. Morgan, director of the conservation division, Kansas Corporation Commission, the state has developed a potential of 1,429,391 barrels from 18,802 producing wells. It is a new high for the state. He also declared the state was trying to hold its daily output to the allowable of 154,500 barrels of oil recommended by the Bureau of Mines.

Conditions Favorable

OCTOBER STATISTICS REVEAL HEAVY DEMAND OFFSET HIGHER PRODUCTION

By L. J. LOGAN, Associate Editor

WITH the benefit of a demand curve that has been above nearly all expectations, the petroleum industry has more than held its strong statistical position.

Despite some loosening of the restraints on crude oil production, the supply of oil remained fairly well in line with market requirements in October, the slacker control having been partially offset by an excess of demand over the general expectations.

It is indicated, moreover, that results in November will be as good as those in October, if not better. It is true that the national program of production control does not call for any withdrawals from crude storage in November, as in the past. But this month is bringing closer adherence to the Bureau of Mines recommendations than in October. It appears, consequently, that the net result will be about the same degree of curtailment in November as in October.

Storage Reduction Abandoned

The Bureau of Mines allocations for October called for withdrawal of 60,000 barrels of crude daily from storage. But Texas officials objected that further reduction of storage was not necessary, and prescribed allowables that permitted the state to exceed its federal allocation about 75,000 barrels daily. In recommending allowables for November, the Bureau of Mines did not prescribe the usual storage withdrawal, so that the amount of crude ordinarily taken from storage could be taken instead from the wells. On this new basis of no further reduction of storage and more liberal allocations to the states for current production, Texas fell back in line with the quotas of the federal agency. In the other states there will be about the same observance of the bureau allocations in November as in October. Thus while the new allocations do not provide for the usual withdrawals from storage, they are being better observed, and the degree of curtailment actually being achieved is about the same in November as in October.

Control Less Strict

However, these net results of both October and November are less favorable than those in most of the earlier months of the year, since they reflect the abandonment of the former policy of steadily reducing storage. In those earlier months, reduction of storage was an important part of the program recommended by the Bureau of Mines, and the bureau's suggestions were sufficiently well observed to result in steady, substantial cutting down of stocks. In October, the program still called for reducing storage, but the production allocations were exceeded to a greater extent than in any other month of the year, and there was a pronounced slowing down of the drain on storage. In November, as brought out above, actual results apparently will be similar to those in October, with the change in policy on stocks compensated by better observance of the production allocations.

Proration Difficulties Loom

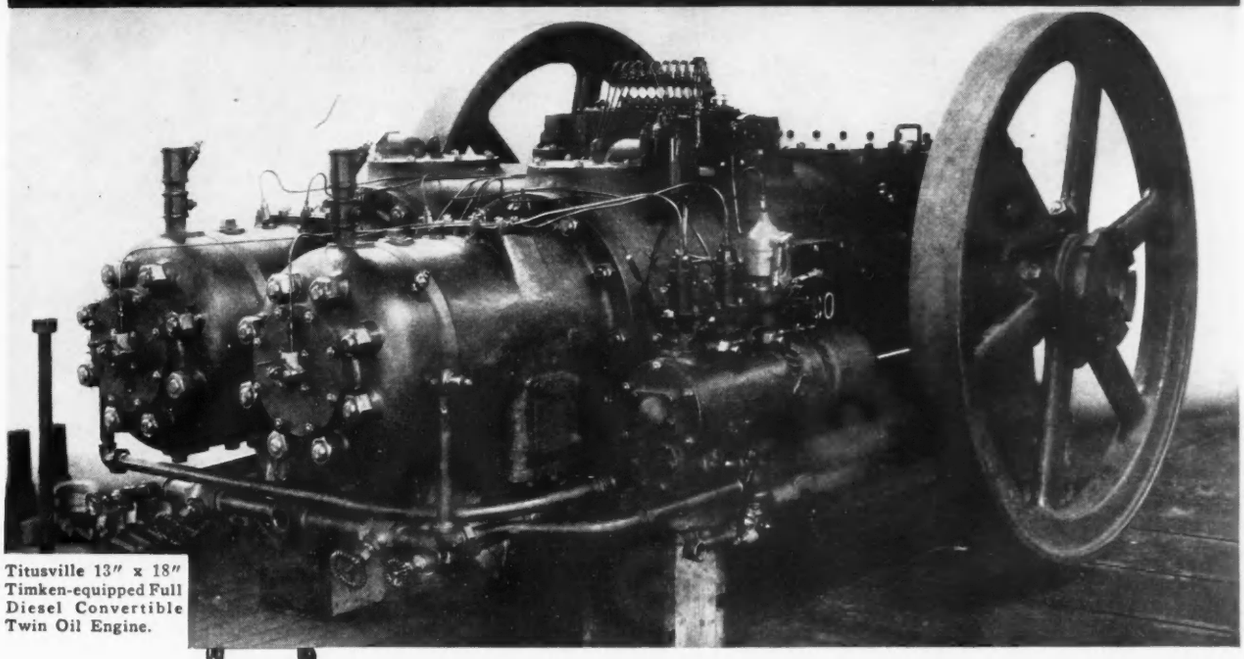
Beyond December 1 the future of the industry is less clearly outlined. There have been predictions that prices of crude as well as refined products will go higher next spring. But some of the leading producing states are finding it increasingly difficult to hold crude output within desired limits, and only a small part of this difficulty has been solved by abandoning the policy of

United States Drilling and Production, October, 1936, and Cumulative for Year

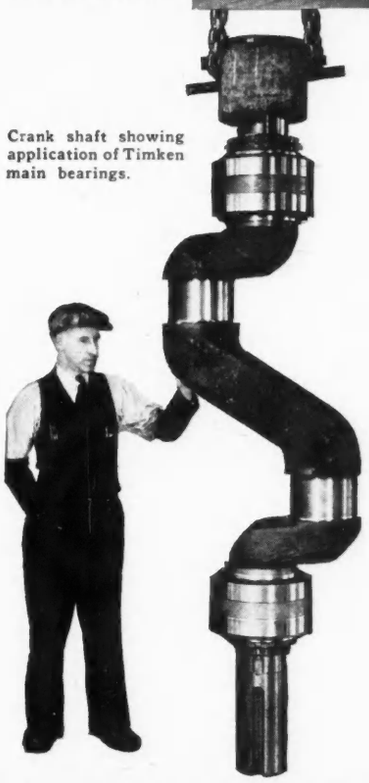
STATE OR DISTRICT	MONTH OF OCTOBER, 1936						CUMULATIVE, JANUARY THROUGH OCTOBER, 1936					
	*Completions	Oil Wells	Gas Wells	Failures	Initial Prod. Bbls. Daily	Total Bbls. Oil Prod.	*Completions	Oil Wells	Gas Wells	Failures	Initial Prod. Bbls. Daily	Total Bbls. Oil Prod.
Arkansas	6	1	1	4	90	868,600	78	17	3	58	6,179	8,968,100
California	89	54	....	35	20,340	17,962,400	938	644	11	283	302,532	179,232,479
Colorado	3	2	....	1	781	151,550	13	6	....	7	3,171	1,405,450
Eastern States	312	98	131	83	2,721	3,541,250	2,523	753	1,090	680	19,082	33,035,950
Illinois	....	....	....	....	....	....	4	....	4	....	....	....
Indiana	13	5	1	7	85	....	160	31	53	76	868	....
Kentucky	25	24	....	1	1,255	....	233	157	7	69	9,537	....
Ohio	212	56	87	69	1,262	....	1,584	438	699	447	7,719	....
West Virginia	62	13	43	6	119	....	542	127	327	88	958	....
Kansas	127	96	3	28	110,395	5,000,650	1,356	964	48	344	973,310	46,511,200
Louisiana	88	57	13	18	49,894	7,250,700	833	548	106	179	1,185,910	66,114,750
North Louisiana	52	32	12	8	36,700	2,374,600	479	309	97	73	1,046,180	21,909,050
South Louisiana	36	25	1	10	13,194	4,876,100	354	239	9	106	139,730	44,205,700
Michigan	63	32	18	13	6,396	932,050	644	281	175	188	48,061	10,332,100
Montana	17	13	1	3	1,092	491,400	145	111	13	21	10,786	4,589,700
New Mexico	48	45	1	2	60,080	2,505,650	472	435	12	25	751,795	21,340,000
Oklahoma	188	128	7	53	252,491	17,568,200	2,372	1,669	106	597	3,542,677	165,424,400
Southeastern States	....	....	....	....	....	....	9	....	....	9	....	....
Alabama	....	....	....	....	....	....	2	....	....	2	....	....
Florida	....	....	....	....	....	....	1	....	....	1	....	....
Mississippi	....	....	....	....	....	....	6	....	....	6	....	....
Texas	948	726	31	191	1,025,768	36,635,800	10,214	7,713	294	2,207	11,636,710	345,727,600
East Texas	183	174	....	9	628,892	13,630,350	2,430	2,284	3	143	8,146,457	133,311,050
East Central Texas	18	10	2	6	15,410	2,186,400	196	137	10	49	340,981	16,735,550
North Texas	142	92	....	50	19,401	1,822,700	1,757	972	6	779	129,221	17,946,250
South Texas	292	214	7	71	91,664	2,678,550	2,723	2,038	83	602	1,017,332	24,365,950
Texas Gulf Coast	72	54	3	15	22,143	8,139,850	937	667	30	240	279,691	73,974,200
Texas Panhandle	50	36	12	2	19,903	1,823,300	539	387	127	25	211,951	18,573,550
West Texas	148	124	3	21	226,565	5,506,300	1,241	1,056	14	171	1,497,775	52,961,700
West Central Texas	43	22	4	17	1,790	848,350	391	172	21	198	13,302	7,859,350
Wyoming	10	6	1	3	3,810	1,273,850	72	53	6	13	45,526	11,387,250
Total United States	1,899	1,258	207	434	1,533,858	94,182,100	19,669	13,194	1,864	4,611	18,525,739	894,068,979

* October completions cover not the calendar month but the four weeks, or 28 days, ended October 24.

New Titusville Diesel goes on Timken Bearings



Titusville 13" x 18" Timken-equipped Full Diesel Convertible Twin Oil Engine.



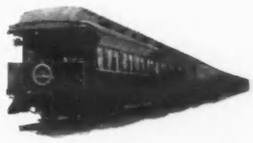
Crank shaft showing application of Timken main bearings.

The new 150 H.P. Titusville 13" x 18" Horizontal Full Diesel Convertible Twin Oil Engine is a notable example of the application of Diesel power to oil field requirements.

It was to be expected, in view of the experience of the Titusville Iron Works Company and of the oil industry itself that Timken Bearings would be included in the projected economies and efficiency of the new engine.

In fact, whatever the source of oil field power—steam, gasoline or oil — Timken-equipped crank shafts are the accepted standard of modern performance, dependability and endurance. It will pay you to see that you have them in your engines.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO



"Olympian Limited", Milwaukee Road, first transcontinental train to be placed on roller bearings. Timken-equipped 1926.

TIMKEN TAPERED ROLLER BEARINGS

Finished Gasoline Stocks

(Totals reported to the American Petroleum Institute, by companies owning about 90 percent of the country's refining capacity. Actual totals for nation must take into account the additional stocks not reported.)

DATE	Total Barrels Reported
September 29, 1934	43,850,000
October 27	41,993,000
November 17	*39,892,000
December 1	40,831,000
December 29	43,969,000
January 26, 1935	47,888,000
February 23	54,399,000
March 2	55,654,000
March 16	†57,406,000
March 30	56,388,000
April 27	55,097,000
June 1	53,180,000
June 29	50,007,000
July 27	48,157,000
August 31	43,787,000
September 28	42,976,000
October 26	41,163,000
November 9	*40,780,000
November 30	43,190,000
December 28	46,472,000
January 4, 1936	*47,288,000
January 25	50,368,000
February 1	52,831,000
February 29	60,881,000
March 21	†62,855,000
March 28	62,559,000
April 25	61,638,000
May 30	59,589,000
June 27	57,263,000
July 25	54,087,000
August 29	49,952,000
September 26	47,427,000
October 3	48,522,000
October 10	47,774,000
October 17	48,290,000
October 24	48,388,000

* Low point of year.
† High point of year.

storage withdrawals. The problem of adequately restricting production has risen up as an ominous cloud on the horizon.

Crude Stocks Decline

The slackening of the restraints on crude oil production in October was reflected in the trends of stocks. Crude oil stocks of the nation decreased around 3,000,000 barrels, but in the meantime gasoline stocks were increased around one half million barrels, and stocks of fuel oil were being built up in anticipation of heavy consumption this winter. Thus there indicated some further reduction of the stocks of all oils, but not a great decrease. In preceding months, the industry had been making comparatively large reductions in storage of all oils, particularly crude. Since May, the reductions of crude stocks had ranged from 4,000,000 to 7,000,000 barrels a month.

The nation's crude stocks, as reported by the Bureau of Mines, declined to 291,846,000 barrels as of October 24, from 294,349,000 barrels October 3 and 294,568,000 barrels September 26.

Storage Lowest in Years

Although the October decline of crude stocks was not as great as in other recent months, the decrease brought the storage to a new low mark of the year and of recent times. The 291,846,000 barrels of crude on hand October 24 was the smallest quantity since early 1924, or for about 13 years. In relation to existing demand, now much greater than in former years, the crude stocks are at the lowest level for an even greater length of time.

The current total stocks of all oils, in actual number of barrels, are the lowest since early 1927, or for approximately 10 years. In terms of days' supply, the current stocks are the smallest since early 1921, or for 16 years.

Gasoline Stocks Increase

In contrast with the unusually encouraging situation regarding crude oil stocks, gasoline stocks lately have followed trends that were not so favorable. In former recent years, the industry continued to take gasoline out of storage until around the middle of November, before beginning to make additions for the larger demand of spring. This year, however, witnessed interruption of gasoline storage withdrawals before the end of September and additions to storage in October, the net increase for the month having been around one-half million barrels.

The American Petroleum Institute showed that total finished gasoline stocks actually reported to the institute as of October 24 aggregated 48,388,000 barrels, compared with 48,522,000 barrels on hand October 3 and 47,427,000 barrels held September 26.

The 48,388,000 barrels on hand October 24 compared with 41,163,000 barrels held October 26, 1935, an increase of 17.5 percent. Such boosting of the stocks was not entirely justified by the gain that has occurred, meanwhile, in gasoline consumption. In the first 8 months of this year, the domestic demand for gasoline was 10.6 percent

Crude Oil Stocks

Bureau of Mines figures as compiled monthly, comprising all crude in storage in the United States.

At End of:	Total Barrels In Storage
October, 1934	346,415,000
November	341,165,000
December	337,254,000
January, 1935	338,174,000
February	337,319,000
March	339,139,000
April	339,793,000
May	338,559,000
June	334,757,000
July	329,351,000
August	324,966,000
September	320,705,000
October	317,155,000
November	315,558,000
December	314,631,000
January, 1936	313,081,000
February	310,812,000
March	313,189,000
April	315,389,000
May	315,169,000
June	311,046,000
July	306,390,000
August	301,757,000

Trend of stocks situation since end of August, figures being from weekly reports of Bureau of Mines.

September 5	300,788,000
September 12	298,448,000
September 19	297,950,000
September 26	294,568,000
October 3	294,349,000
October 10	292,701,000
October 17	292,538,000
October 24, 1936	291,846,000

Excesses of Average Daily Crude Production Above Bureau of Mines Recommendations

(Barrels Daily)

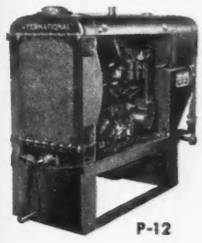
Note: Production figures are from American Petroleum Institute Reports.

MONTH	California	Kansas	Louisiana	New Mexico	Oklahoma	Texas	Other States	United States
March, 1936:								
Production	566,510	147,600	191,232	60,532	515,484	1,111,194	236,198	2,828,750
Demand	538,800	142,000	151,400	49,300	506,300	1,104,000	247,100	2,738,900
Excess	27,710	5,600	39,832	11,232	9,184	7,194	*10,902	89,850
April, 1936:								
Production	572,671	153,600	210,642	63,692	550,170	1,145,953	217,872	2,914,600
Demand	552,600	146,000	160,900	63,200	525,000	1,122,800	226,800	2,797,300
Excess	20,071	7,600	49,742	492	25,170	23,153	*8,928	117,300
May, 1936:								
Production	576,643	156,679	228,040	74,600	546,182	1,163,460	230,449	2,976,053
Demand	544,000	150,100	170,500	65,900	538,300	1,132,500	225,000	2,826,300
Excess	32,643	6,579	57,540	8,700	7,882	30,960	5,449	149,753
June, 1936:								
Production	578,240	145,922	222,427	73,033	549,765	1,152,873	231,648	2,953,908
Demand	535,500	153,100	175,700	68,300	552,500	1,125,700	227,500	2,838,300
Excess	42,740	*7,178	46,727	4,733	*2,735	27,173	4,148	115,608
July, 1936:								
Production	574,855	153,251	229,968	74,005	543,822	1,142,690	231,931	2,950,522
Demand	550,800	164,200	186,800	69,400	569,800	1,146,500	229,700	2,917,200
Excess	24,055	*10,949	43,168	4,605	*25,978	*3,810	2,231	33,322
August, 1936:								
Production	578,039	161,779	234,369	77,947	575,421	1,166,564	235,431	3,029,550
Demand	550,000	166,500	188,500	70,100	575,500	1,154,700	231,600	2,936,900
Excess	28,039	*4,721	45,869	7,847	*79	11,864	3,831	92,650
September, 1936:								
Production	576,240	163,557	236,353	78,995	571,297	1,157,593	236,273	3,020,308
Demand	535,200	160,000	186,200	71,600	563,000	1,123,900	224,100	2,864,000
Excess	41,040	3,557	50,153	7,395	8,297	33,693	12,173	156,308
October, 1936:								
Production	579,432	161,311	233,893	80,827	566,716	1,181,800	234,153	3,038,132
Demand	535,300	155,000	189,300	74,200	559,900	1,106,900	221,700	2,842,300
Excess	44,132	6,311	44,593	6,627	6,816	74,900	12,453	195,832

* Under-production.

INTERNATIONAL ENGINES

Cut Power Costs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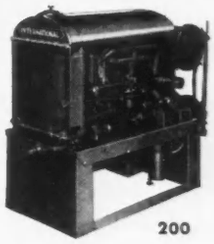
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Brief Specifications
INTERNATIONAL POWER UNITS

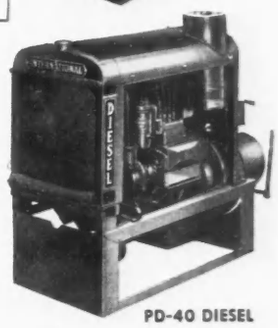
Model	No. Cylinders	Max. Horsepower	Cont. Load Horsepower—80% of Max. H. P.	R. P. M.
P-12	4	22.5	18	1400 and 2000
200	4	33.5	26.8	1000
P-30	4	39.5	31.6	1150
300	4	47	37.6	1050
PA-40	6	59.5	47.6	1400 and 1800
PD-40 Diesel	4	62.5	50	1250
PA-50	6	66.5	53.2	1400 and 1800
PD-80 Diesel	6	100	80	1400
PA-100	6	106	85	1400

300

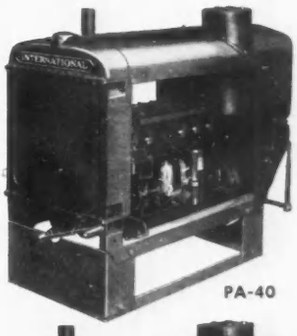
INTERNATIONAL ENGINES can easily become a most important factor in your business. That's the experience of others—and it is the best guide to follow when you need industrial power.

International Engines are used in many different ways. For stationary work, these rugged, dependable, multi-cylinder engines are built into the compact power units shown here. The line includes 4 and 6-cylinder power units for *gasoline, kerosene, distillate,* or *natural gas,* and 4 and 6-cylinder *Diesel* power units. Sizes range from 12 to more than 100 h.p.

These efficient engines are also built into International Wheel Tractors and TracTracTors (crawlers) for heavy work in industry and commerce. And they are widely used by well-established manufacturers to power road machinery, locomotives, shovels, lighting plants, and many other types of equipment. They are backed by International Harvester's more than 30 years of experience building engines, tractors, and motor trucks, and by a network of distribution and service. The nearby International Industrial Power dealer or Company-owned branch will give you specifications, prices, and other information on request.



PD-40 DIESEL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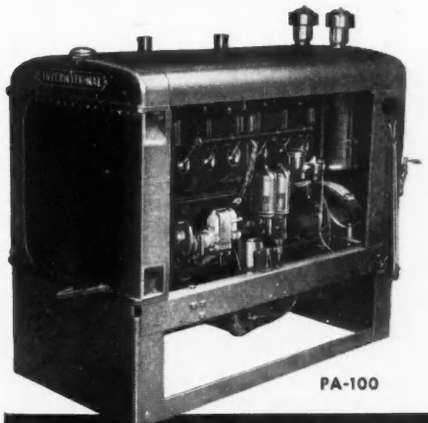
INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
606 So. Michigan Ave. Chicago, Illinois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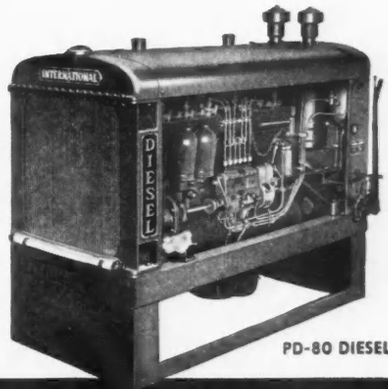
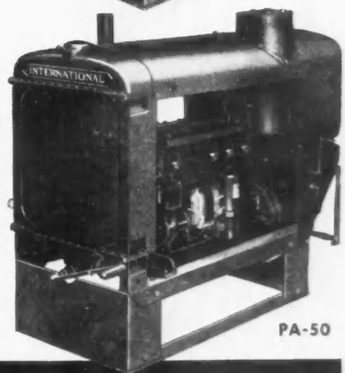


PD-80 DIESEL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INTERNATIONAL HARVESTER

United States Drilling and Production in First Ten Months of 1936 and 1935

STATE OR DISTRICT	WELLS COMPLETED			BBLS. OF CRUDE PRODUCTION		
	In 1936 (10 Mos.)	In 1935 (10 Mos.)	Percent Change	In 1936 (10 Months)	In 1935 (10 Months)	Percent Change
Arkansas	78	111	— 30	8,968,100	9,335,700	— 4
California	938	1,098	— 15	179,232,479	166,511,052	+ 8
Colorado	13	9	+ 44	1,405,450	1,315,400	+ 7
Eastern States	2,523	2,033	+ 24	33,035,950	31,970,250	+ 3
Kansas	1,356	1,101	+ 23	46,511,200	44,271,050	+ 5
Louisiana	833	600	+ 39	66,114,750	40,338,800	+ 64
North Louisiana	479	253	+ 89	21,909,050	7,412,400	+196
South Louisiana	354	347	+ 2	44,205,700	32,926,400	+ 34
Michigan	644	458	+ 40	10,332,100	12,756,400	— 19
Montana	145	135	+ 7	4,589,700	3,511,300	+ 31
New Mexico	472	238	+ 98	21,340,000	15,699,600	+ 36
Oklahoma	2,372	1,906	+ 24	165,424,400	151,325,150	+ 9
Southeastern States	9	19	— 52	.....	.....	....
Texas	10,214	9,674	+ 6	345,727,600	313,093,250	+ 11
East Texas	2,430	3,683	— 34	133,311,050	134,526,150	— 1
East Central Texas	196	205	— 4	16,735,550	14,929,550	+ 12
North Texas	1,757	1,796	— 2	17,946,250	17,682,200	+ 1½
South Texas	2,723	1,542	+ 77	24,365,950	18,107,150	+ 35
Texas Gulf Coast	937	909	+ 3	73,974,200	55,679,850	+ 33
Texas Panhandle	539	537	+ ½	18,573,550	17,868,450	+ 4
West Texas	1,241	646	+ 92	52,961,700	46,539,300	+ 14
West Central Texas	391	356	+ 10	7,859,350	7,760,600	+ 1
Wyoming	72	58	+ 24	11,387,250	10,994,750	+ 4
Total United States	19,669	17,440	+ 12.8	894,068,979	801,122,702	+ 11.6

greater than in the similar period last year. In August, 1936, the domestic demand was 7.6 percent larger than in August, 1935.

Most States Exceed Quotas

The fact that some reduction of oil storage was effected in October, despite over-producing of allocations, demonstrated that again petroleum consumption had exceeded expectations.

Actual production, as estimated weekly by the American Petroleum Institute, averaged 3,038,132 barrels daily. That was 195,832 barrels a day more than the Bureau of Mines recommendation, the greatest excess this year.

Contributing most heavily to the excess was Texas, with over-production of 74,900 barrels daily above its federal allocation. Louisiana was second with an excess of 44,593 barrels daily, and California only slightly behind with 44,132 barrels a day of excess. Oklahoma, Kansas, and New Mexico showed about the same excesses, each over-producing its quota over 6000 barrels daily. Outside of these six leading states, the aggregate net excess for the country was 12,453 barrels daily. 8he 195,832 barrel daily excess for the nation in October compared with 156,308 barrels daily over-production in September and an excess of 92,650 barrels a day in August.

Crude Output Reflects Big Demand

In the first 10 months of this year, United States crude oil production aggregated 894,068,979 barrels, or 11.6 percent more than in the similar period of 1935. That this increase was justified is evidenced by the fact crude oil storage has been steadily decreasing, the withdrawals having been needed in addition to the output of the wells in meeting the remarkably great demand. In the first 8 months of this year, latest period so far covered by Bureau of Mines reports, total demand for United States petroleum was 10.3 percent greater than in the corresponding period of 1935.

Drilling at High Level

Drilling has continued to outrun both crude production and petroleum demand. In comparison with the 11.6 percent increase in production the first 10 months of 1936 over that period last year, drilling showed a 12.8 percent increase. This year, up to November 1, well completions in the United States totaled 19,669, while at the same time last year the total was 17,440 wells.

In October the drilling activity continued comparatively high, showing some increase over that in September, although slightly under the levels of April, May, June, and August, when field work was the most active of the past six years. Wells were completed in October at the average rate of 67.8 daily. In September the completions had averaged 65.4 per day. The highest average of the year was that of 71.9 wells daily in May.

Many States Gain

States and districts that have shown oustanding gains in drilling this year, compared with last year, include New Mexico, West Texas, North Louisiana, and South Texas, field work having nearly doubled in each of those areas. Michigan shows a 40 percent increase, and Colorado a 44 percent rise.

There have been gains of 24 percent in the Eastern States, Oklahoma, and Wyoming, while Kansas shows a 23 percent increase. Smaller gains have occurred in South Louisiana, Montana, the Texas Gulf Coast, the Texas Panhandle, and West Central Texas. There has been less drilling this year than last year in Arkansas, California, the Southeastern or Eastern Gulf States, East and East Central Texas, and North Texas. In the East Texas field, well completions were 34 percent lower in the first 10 months of this year than in that period last year.

United States Production

(Based on American Petroleum Institute estimates, which do not include oil that may have been surreptitiously produced.)

MONTH	Daily Average (Barrels)	Federal Estimate of Demand
January, 1934	2,233,505	2,183,000
February	2,239,070	2,183,000
March	2,339,950	2,282,800
April	2,420,950	2,366,200
May	2,575,380	2,366,200
June	2,588,100	2,528,300
July	2,560,550	2,530,300
August	2,475,300	2,449,300
September	2,431,950	2,341,700
October	2,364,150	2,325,800
November	2,375,400	2,340,300
December	2,414,600	*2,307,000 †2,460,300
January, 1935	2,500,850	2,460,300
February	2,521,250	2,526,100
March	2,568,800	2,520,300
April	2,559,750	2,527,300
May	2,601,350	2,561,200
June	2,695,100	2,651,000
July	2,707,150	2,660,000
August	2,676,250	2,600,600
September	2,737,750	2,613,000
October	2,780,850	2,554,200
November	2,825,900	2,563,700
December	2,826,850	2,540,200
January, 1936	2,818,300	2,559,200
February	2,774,450	2,648,100
March	2,828,750	2,738,900
April	2,914,600	2,797,300
May	2,976,053	2,826,300
June	2,953,908	2,838,300
July	2,950,522	2,917,200
August	3,029,550	2,936,900
September	3,020,308	2,864,000
October	3,038,132	2,842,300

* December 1-16.
† December 17-31.

Wells Completed in the United States

(Including Oil Wells, Gas Wells, and Dry Holes)

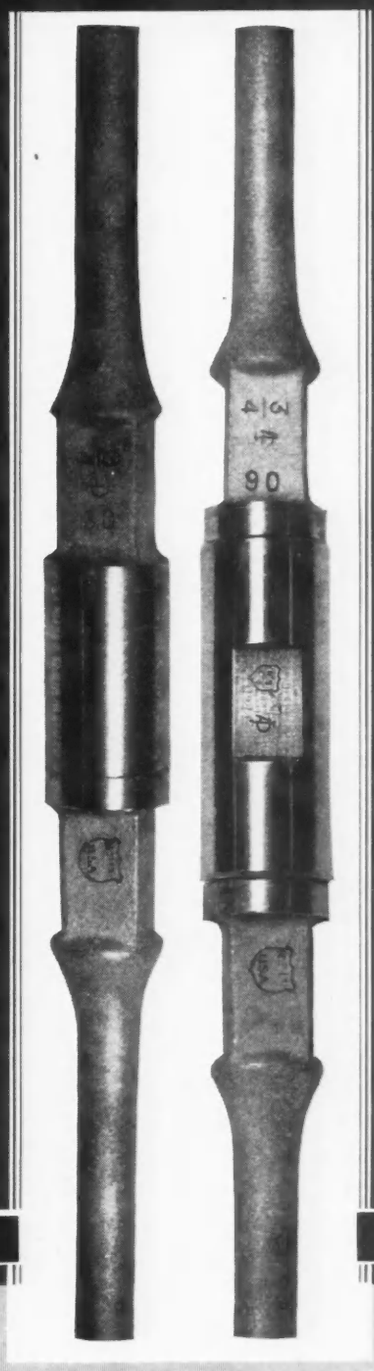
MONTH	Daily Average
January, 1933	30.0
February	30.6
March	26.6
April	25.5
May	25.6
June	21.1
July	23.1
August	30.7
September	36.5
October	40.9
November	46.9
December	47.7
January, 1934	39.7
February	38.1
March	40.6
April	44.0
May	50.7
June	51.5
July	53.6
August	51.3
September	43.2
October	49.6
November	49.9
December	48.3
January, 1935	47.9
February	49.6
March	48.8
April	58.5
May	63.6
June	58.6
July	60.9
August	62.8
September	57.9
October	57.1
November	55.2
December	54.2
January, 1936	52.4
February	51.6
March	60.6
April	69.2
May	*71.9
June	70.9
July	66.6
August	70.4
September	65.4
October	67.8

*** Highest since July, 1930, when completions averaged 76.6 daily. Average dropped in August, 1930, to 52.4 and remained below that figure until July, 1934.**

SUCKER RODS

for ALL SERVICE CONDITIONS

National Sucker Rods are made in five grades representing what we believe to be the maximum number needed for all present day requirements. On account of varying service conditions, we consider that the field can not be properly covered by a fewer number of rods. Whether your loads are heavy or light, corrosive or non-corrosive, there is a National Rod with the correct combination of physical and chemical properties for your requirements.



THE NATIONAL SUPPLY COMPANY

NSCO

National

MEN IN THE INDUSTRY'S NEWS

L. MOSELEY MOFFITT, president of Triangle Drilling Company of Shreveport, was elected president of the Louisiana-Arkansas division, Mid-Continent Oil and Gas Association, at the division's annual meeting held in Shreveport, Thursday, November 5. He succeeds D. W. Harris of Shreveport, vice-president and general manager of Arkansas-Louisiana Gas Company, who was named a vice-president for the ensuing year. Other vice-presidents named were: J. S. Hasson, Ohio Oil Company, Shreveport; Charles G. Laskey, Belchic and Laskey, Shreveport; J. R. McWilliams, Standard Oil Company of Louisiana, Shreveport; C. R. Minor, Gulf Refining Company of Louisiana, Shreveport. R. F. Sebastian of Shreveport was re-elected treasurer, and Arthur R. Campbell, Shreveport, was re-elected secretary. F. Ray McGrew, Standard Pipe Line Company, Shreveport, and C. N. Black, Magnolia Petroleum Company, Shreveport, were named members of the board of directors of the general Mid-Continent Oil and Gas Association, representing the Louisiana-Arkansas division.

JUDGE CECIL MORGAN, who recently resigned from the bench of the Caddo Parish district court to accept a position with the legal staff of Standard Oil Company of Louisiana, was placed in charge of the Shreveport office of the company's legal department November 1.

PROFESSOR I. M. GOUBKIN, chairman of the program arrangement committee of the Seventeenth International Geological Congress, scheduled for Moscow, U. S. S. R., in the summer of 1937, is expected back in Moscow soon, according to a communication from that city received November 5.

LEE H. GRAY, president of Southern Oil Refining Company and one of the active purchasers and transporters of crude from the East Texas field during the early stages of development, was fatally burned November 4 by an explosion in his hotel room at Tyler.

C. M. CHASE, West Texas scout for Sun Oil Company with headquarters at San Angelo, visited Dallas, his former home, while on vacation the past week.

E. D. WINGFIELD, of Freeport Sulphur Company, was the speaker at the November 5 meeting of the Houston Geological Society, discussing the mining of sulphur in the Gulf Coast Region, with motion pictures illustrating the talk.

RUSH GREENSLADE, Tulsa, vice president of Gulf Oil Corporation, is making a tour of South America, accompanied by Mrs. Greenslade. They expect to return to Tulsa late in November.

J. F. WILHITE, Maracaibo, for 10 years field engineer of Venezuela Gulf Oil Company, is in the United States on vacation. Upon his return to Venezuela he will become resident engineer for the company, with headquarters at Ciudad Bolivar, in eastern Venezuela.

V. R. GARFIAS has recently been made a director of Cities Service Company. He has been for years manager of foreign operations of this company and formerly was in charge of petroleum engineering at Stanford University.

BEVERLY B. WOOLWINE, cashier of Huasteca Petroleum Company, has returned to headquarters at Tampico, Mexico, following a two months' vacation in Colorado and California.

J. E. CAWLEY, auditing department, Mexican Gulf Oil Company, has returned to Tampico, Mexico, after a vacation in the United States.

E. V. HANZAN, division engineer, and W. S. Crake, mechanical engineer, were among those moved to Houston when Shell Petroleum Corporation closed the Corpus Christi production office last week.

LEWIS BROOKS, Robstown, Texas, has resigned his position with G. A. Balzer to join the engineering department of Humble Oil & Refining Company.

HERMAN HEEP is moving the offices of Heep Oil Corporation and Conroe Drilling Company from Houston to Corpus Christi. The present Corpus Christi offices of these concerns in the Nixon building are being consolidated and moved to the new Heep Building, just completed. Texon Drilling Company also is moving from the Nixon building to the Heep building.

The Oil Man's Calendar

7–16	American Institute of Mining and Metallurgical Engineers, Western Meeting, Mexico City, Mexico.
9–12	American Petroleum Institute, 17th Annual Meeting, Chicago, Illinois.
20	Mid-Continent Oil & Gas Association, Kansas-Oklahoma Division, Tulsa, Oklahoma.
20–21	Society of Petroleum Geophysicists, Houston, Texas.
NOV. 30–	American Society of Mechanical Engineers, Annual Meeting, Society's Building, New York.
NOV. 30–DEC. 1	Independent Petroleum Association of America, Biltmore Hotel, Oklahoma City, Oklahoma.
1	Interstate Oil-Compact Commission Oklahoma City, Oklahoma
DEC. 4	Mid-Continent Oil and Gas Association, Texas Division, Annual Meeting, Houston, Texas.
5–13	First International Consumers Petroleum Exposition, Detroit, Michigan.
15	Mid-Continent Oil & Gas Association, Annual Meeting of General Board of Directors, Tulsa, Oklahoma.

E. H. LEROUX, who lately retired from active service as president of Oklahoma Pipe Line Company, has been honored by all employees of the firm through the presentation of a symbolic model of a crude oil pipe line pumping unit. The gift is of silver construction, complete with piping, control valves and is made to scale. The entire unit is mounted on a base having E. H. Leroux's portrait on one side and an inscription on the other.

R. G. RICE will be in charge of the Corpus Christi office of C. and S. Pipe Line Company, which is preparing to construct a new pipe line from the Bentonville-King district to the port of Corpus Christi. Rice formerly lived in San Antonio.

LEWIS W. MacNAUGHTON, formerly geologist for Amerada Petroleum Corporation at Houston, has become associated with E. DeGolyer as a consulting geologist, with offices at 611 Continental Building, Dallas, Texas.

L. B. "Pinky" HERRING, geologist for Rancho Oil Company, has opened offices in the Nixon Building, Corpus Christi. He formerly was in San Antonio.

W. A. MAY has been transferred from Tyler to Corpus Christi, Texas, and promoted to the position of district superintendent by The Texas Pipe Line Company.

C. G. RUNKLE, president of International Derrick & Equipment Company of California, with headquarters at Torrance, California, has resigned, effective October 31, and it is understood he has made a connection with a large eastern concern. Runkle has been with International in California since 1932, and was formerly with International-Stacy Company as vice-president.

FRED PARKS, formerly Texas state manager for Bridgeport Machine Company, has received a promotion and transfer to the office of Manager of Branch Stores at Wichita.

DIED:

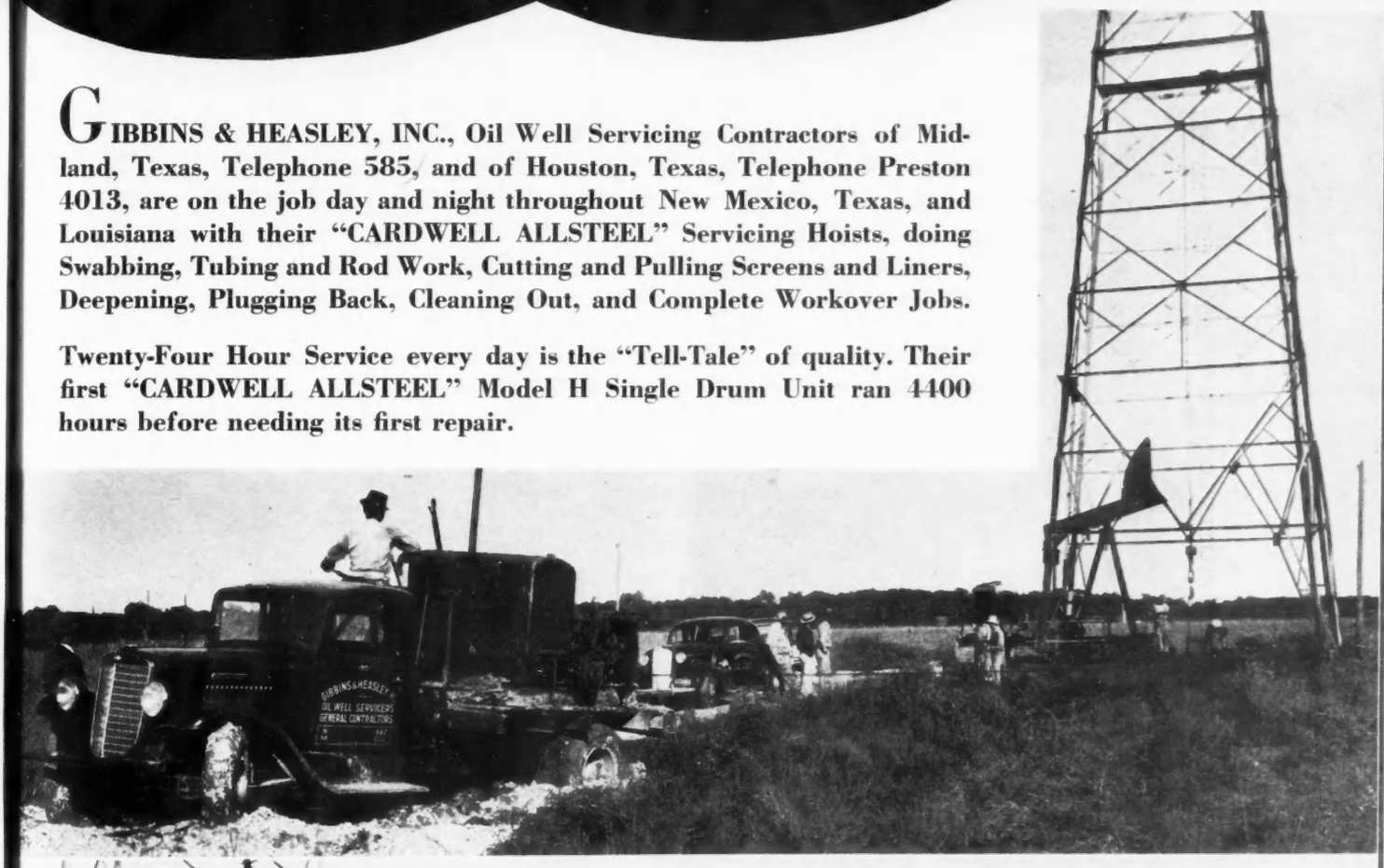
RICHARD B. KESTER, general field superintendent of Lago Petroleum Company in Venezuela, died recently. Kester was connected with various subsidiaries of Standard Oil Company of New Jersey for many years. Prior to going to Venezuela 8 years ago he was general superintendent of field operations for the Cia. Transcontinental de Petroleo, S. A., in Mexico. He is survived by his wife and a son.

JOHN J. (Jay) WELDER, 48, prominent rancher of Victoria, Texas, died at his home November 3. Welder is well known among oil circles, he and his family being the owners of a large amount of acreage in South Texas under which millions of barrels of reserves have been developed.

SERVICE

GIBBINS & HEASLEY, INC., Oil Well Servicing Contractors of Midland, Texas, Telephone 585, and of Houston, Texas, Telephone Preston 4013, are on the job day and night throughout New Mexico, Texas, and Louisiana with their "CARDWELL ALLSTEEL" Servicing Hoists, doing Swabbing, Tubing and Rod Work, Cutting and Pulling Screens and Liners, Deepening, Plugging Back, Cleaning Out, and Complete Workover Jobs.

Twenty-Four Hour Service every day is the "Tell-Tale" of quality. Their first "CARDWELL ALLSTEEL" Model H Single Drum Unit ran 4400 hours before needing its first repair.



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Plan Gasoline Line

PIPE TO RUN FROM EAST TEXAS TO LORAINE, LA.

Dallas.—East Texas Gasoline Company, headed by Freeman W. Burford, Dallas, has started clearing right-of-way for the construction of a 6-inch gasoline pipe line from the East Texas field to Loraine, Louisiana, near Shreveport, where connection is due to be made with the Louisiana & Arkansas Railroad in making deliveries of motor fuel to a barge terminal site on the Mississippi River near Finston, Louisiana. This pipe line unit will involve about 40 miles of line, and will be operated with one main line station to be located near the company's refinery at Longview junction.

Subject to approval by the Louisiana Public Service Commission, the Louisiana & Arkansas Railroad proposes to post a tariff of 6.9 cents per 100 pounds on gasoline movement in tank cars from Loraine to the river terminal. In the event the rail rate is not granted, the East Texas Gasoline Company proposes to extend its line via Shreveport to Natchez, Mississippi, a distance of about 225 miles. A number of East Texas refining companies are committed to ship gasoline through either unit, while if the line is extended to Natchez, several plants in the Shreveport area will take advantage of the low common carrier rate to be made available by the line.

NEW OIL LINE

45-mile system to build in Corpus Christi area

San Antonio.—Another pipe line project for the port of Corpus Christi is to be commenced immediately by C. and S. Pipe Line Company of San Antonio. The line will extend from the Bentonville-King district of Jim Wells and Nueces counties, and will be approximately 45 miles long, terminating at one of the present deep water terminals.

The line is to be a six-inch, welded proposition, capable of handling 10,000 barrels of crude per day under a high pressure. The line will likely follow a route from just north of the Bentonville townsite southeast through the Agua Dulce field, thence northeast to the port. There will be a pump station in the field and a booster station in the central section of the line.

The C. and S. Pipe Line Company is owned by the La Jita Corporation, headed by John F. Camp of San Antonio.

Under present plans, the oil will be handled through a terminal now in operation in the Corpus Christi port district. It will be exported under a large foreign contract just made by the company.

NEW FIELD OUTLET

Sulphur Bluff line will be built by Murchison

Dallas.—Pipe line outlet for Sulphur Bluff field, Northeast Texas' second Paluxy sand area, will be provided shortly by the American-Liberty Pipe Line Company, owner of a trunk line that links the East Texas field with storage and tanker loading facilities on the Houston Ship Channel, according to Clint W. Murchison, vice president. Pipe is due to arrive within 10 days to permit construction of about 20 miles of 6-inch welded line from the field to Talco, where connection will be made with Humble Pipe Line Company in making deliveries to the East Texas field. The latter has arranged to handle the oil on a common carrier basis, which involves a trunk line tariff of 7½ cents per barrel.

Crude Bought for 57½ Cents

Acting as trustee, Murchison recently contracted to purchase the entire proration allowable of the discovery leasehold in Sulphur Bluff field for a period of two years, paying 57½ cents per barrel at the well during the first year and the prevailing market price thereafter. The discovery group has 2 completed wells, and is proceeding with an orderly drilling program that calls for a minimum of two rigs remaining active.

Erection or acquisition of a crude skimming plant in East Texas to process the low gravity crude from the Paluxy zone is under consideration by Murchison and associates. The residue would be marketed as flux for roofing and road oil material plants, while the gasoline and other light fractions may be dispatched to the Coast through American-Liberty Pipe Line Company's trunk line. This carrier will not attempt to move the sulphur contaminated low gravity oil from Sulphur Bluff and Talco fields to the Coast as long as it is handling crude from the East Texas field.

Crude from the Paluxy zone has a tendency to congeal in cold weather. In order to forestall transportation problems, American-Liberty Pipe Line Company proposes to equip its booster station at Sulphur Bluff with heating units, and if necessary heat the oil in the line while en route to Talco.

LINE WORK STARTS

Run 5½-inch pipe from Talco to Mount Pleasant

Mount Pleasant, Texas.—Construction work is under way on the Talco Pipe Line Company's 15-mile 5½-inch crude line to extend south from its tank farm in Talco field to Mount Pleasant, where connection will be made with the main line of the Cotton Belt Railroad. This line will supplement tank car shipments over the Paris & Mount Pleasant Railroad from a rack at Talco. Capt. J. F. Lucey, president of Talco Pipe Line Company, and associates plan to erect a cracking plant at Mount Pleasant, having obtained a large fuel oil contract with the Cotton Belt Railroad.

TO BUILD PLANT

Rodessa natural gasoline layout is on Texas side

Dallas.—American Liberty Oil Company, Dallas, will start construction work shortly on a well pressure absorption type natural gasoline plant in Rodessa field, according to Dudley S. Golding, president. The plant will be located near the center of the company's producing properties on the Texas side of the field. It will have a capacity of 20,000,000 cubic feet of gas daily.

FLOUR BLUFF LINE

Corpus Christi.—Humble Pipe Line Company is preparing to construct a 4 and 8-inch line from Flour Bluff field in Nueces County to Viola. The 18-mile line will have a capacity of approximately 8000 barrels daily.

IPAA COMMITTEES

Tulsa.—Eleven committees are to be named so reports can be heard at the annual meeting of the Independent Petroleum Association of America in Oklahoma City, November 30 and December 1. The reports will be made on activities, nominations, constitution and by-laws, balance of supply with demand, credentials, rules and order of business, membership, resolutions, public relations, domestic asphalt, budget and finance and royalty owners.

Activities of the meeting will begin November 29 when committee sessions will start.

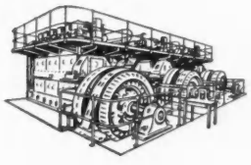
There is no Substitute for

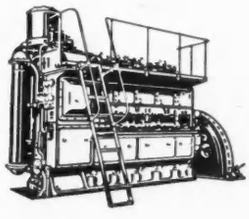
EXPERIENCE

EVERY Diesel engine should more or less reflect somewhat the experience of the builder.

McIntosh & Seymour was organized as an engine builder in 1886. More than 1800 steam engines of various types and sizes up to 10,000 hp. were built prior to 1913. However, in 1913, or 23 years ago, the building of steam engines was discontinued, and thereafter the entire engineering personnel and manufacturing facilities were devoted exclusively to the development, manufacture and sale of Diesel engines.

Sulzer Brothers of Winterthur, Switzerland (from whom the Diesel Engine Division of the American Locomotive Company holds a license to build the Alco-Sulzer two-cycle Diesel engine), was established in 1834—although the name Sulzer had been identified with the metal working industry since 1775. They built their first steam engine in 1851. As early as 1893, the year that Rudolph Diesel secured his first patent, Sulzer Brothers obtained the manufacturing rights of the Diesel Oil Engine, and were therefore actively engaged in Diesel engine development from the very beginning.





Furthermore, we have also the American Locomotive Company and its 100 years experience building railroad power units of all types.

Such is the background of the Diesel designs being offered by the Diesel Engine Division of the American Locomotive Company.

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AMERICAN LOCOMOTIVE COMPANY

DIESEL ENGINE DIVISION

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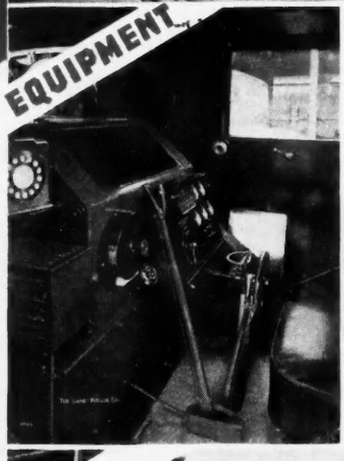
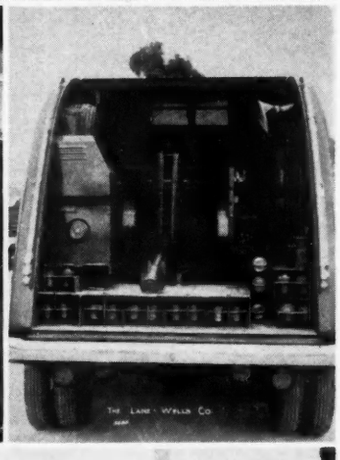
To Serve You best

WE'VE GOT WHAT IT TAKES!





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TRUCKS... 15 of these "oil-getters" are now at your service night and day in California, Gulf and Mid-Continent Fields... Modern... Dependable! We are constantly adding new trucks in each field in our aim to be on the job **when** and **where** you want service.

EQUIPMENT... A truck load of precision equipment is on every job to assure accuracy, safety and perfect satisfaction. In the shooter's cab are depth indicator, individual shot control, weight indicator and safety firing switch. The truck carries its own power plant, 8 to 12 thousand feet of cable, sheave assembly, the correct size guns and enough loads to complete any job. This modern equipment is our guarantee that your job will be done with accuracy in a minimum time.

MEN... Sales, Engineering, Service and Production Departments are maintained with the highest type personnel... Men who have perfected all phases of the Gun-Perforator Service are constantly at your command... developing new methods to save you time, labor and money... manufacturing the best in equipment and maintaining the speediest service possible.

These facilities are all kept to the highest degree of perfection to guarantee you... we've got what it takes... to serve you best.

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A. P. I. Meeting Opens

VARIED SUBJECTS OF WIDE APPEAL ARE TO FEATURE ANNUAL PROGRAM

CHICAGO.

THE annual meeting of the American Petroleum Institute, the industry's largest convention, opened at the Stevens Hotel in Chicago this morning for a four-day session, November 9 to 12 inclusive.

The Institute's registration and information desk, in the foyer or reception hall of the Grand Ball Room, Stevens Hotel, was open and early registrations indicated 3000 or more would attend the meeting.

A goodly portion of this number already have arrived. The first of several special trains from various oil refining and producing centers arrived in Chicago yesterday, November 8. Included among these was the joint special of the Houston Wildcats and Texas Division of the Mid-Continent Oil & Gas Association, which brought the largest number of Texans to Chicago in the history of the Institute. Shortly after the arrival of this special train there arrived the California special, which traveled farther than any other special train coming to the convention.

The usual plan for the Institute program is being followed, with committee meetings on the opening day, committee meetings, general session and evening group sessions on Tuesday; group sessions, general sessions and annual dinner on Wednesday, and final group sessions on Thursday.

Three men prominent in their respective fields will be guest speakers on the program. They are Colonel E. O. Thompson, chairman of the Interstate Oil Compact Commission and of the Texas Railroad Commission; Congressman Samuel B. Pettengill of the Third District, Indiana; and Dr. Hugh S. Taylor, professor of chemistry at Princeton University.

There will be two general sessions at which all departments of the American Petroleum Institute are expected to participate. The first general session will be Tuesday afternoon, when accident prevention certificate awards will be presented, and the Board of Counsellors will make its report on nominations, and officers will be elected. President Axtell J. Byles of the Institute will make his address at this time and will discuss the economic and legislation conditions and trends in the industry.

Colonel Thompson will deliver an address, "Accomplishments of the Interstate Oil Compact Commission" at this general session.

The next meeting of the general Institute will be Wednesday afternoon. Fundamental research in the depression years will be the subject of Hugh Stott Taylor of Princeton University at this session. Additional features will be heard also.

Congressman Pettengill, a member of the Cole Committee that investigated the petroleum industry at the request of Congress in 1934 and author of the book, "Hot Oil", will speak on "The Survival of Free Enterprise" at this general session.

The Board of Directors will hold three

AXTELL J. BYLES, of New York, N. Y., president of the American Petroleum Institute, was born October 21, 1880, at Titusville, Pennsylvania, and was educated in Titusville High School, Lawrenceville School and Princeton University, which granted him the degree of Bachelor of Science in 1903. He read law in Pittsburgh, and was admitted to the bar in 1905. Byles was counsel, then president of Tide Water Associated Oil Company, and chairman of the board of Associated Oil Company. He resigned these positions in 1933 to become eighth president of the Institute.

W. R. BOYD, JR., of New York, N. Y., and Teague, Texas, is executive vice president of the American Petroleum Institute. Boyd was born January 7, 1885, at Fairfield, Texas. He is a member of the Texas Bar, and was formerly engaged in the banking business in Texas. He has been with the American Petroleum Institute since 1920.

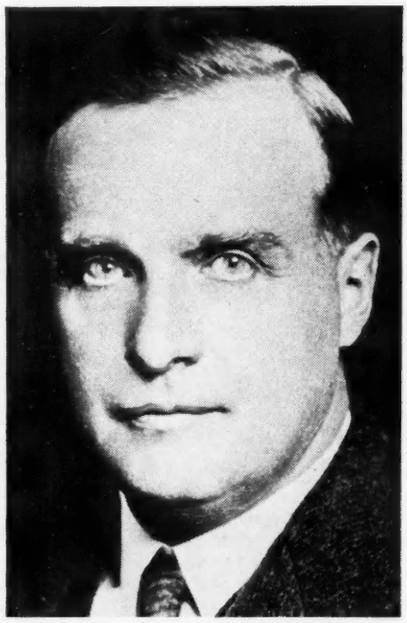
LACEY WALKER, secretary and assistant treasurer of the American Petroleum Institute since December 1928, was born at Oskaloosa, Iowa, February 16, 1892. He studied accounting and business law. After several years in the railroad industry, he became statistician for Western Petroleum Refiners Association. Walker joined the staff of the American Petroleum Institute as statistician in January, 1921. Subsequently he became head of the Institute's Division of Statistics. He had served as assistant treasurer for five years at the time he was elected secretary and reelected assistant treasurer.

Executives of the American Petroleum Institute

Guest Speakers at American Petroleum Institute Meeting

ERNEST O. THOMPSON is chairman of the Interstate Oil Compact Commission and of the Texas Railroad Commission. He is well known to the oil industry because of his daily contact through these two important positions. He will speak on "Accomplishments of the Interstate Oil Compact Commission." This native Texan has been engaged in business since the age of nine, when he clerked in a drug store prior to selling papers on the streets of Amarillo. However, he also managed to procure his education. After graduating from a business college, he also obtained a degree from the University of Texas. Besides coming in contact with the oil business through his law practice, his first association with it was when he was appointed to the Texas Railroad Commission in 1932, at a time when the East Texas oil field was giving this control body much trouble. Since his membership, the Texas commission has promulgated conservation regulations to handle the proration situation in Texas. He has sponsored the Interstate Oil Compact since it first started, and recently was elected chairman.

SAMUEL B. PETTENGILL, who will speak at a general session on "The Survival of Free Enterprise" is a member of the Congressional House from the Third District of Indiana. He was first elected to Congress in 1930, and has served on the Committee of Military Affairs, the Special Committee on Government Competition with Private Business and at present is a member of the Committee on Interstate and Foreign Commerce. To the oil industry he is better known as a member of the Cole Committee that investigated the petroleum industry at the request of Congress in 1934. He is author of a book called "Hot Oil."



HUGH SCOTT TAYLOR is of English birth and education. He has served Princeton University since 1914 as instructor in physical chemistry, assistant professor, professor of physical chemistry, chairman of the chemistry department and now is David B. Jones professor of chemistry. He is associate editor of numerous chemical journals and a member of various scientific societies and petroleum industry organizations. Dr. Taylor holds the Francqui Professorship in the University of Louvain, Belgium, for 1936 and 1937.

meetings, the first Monday afternoon. At noon on Tuesday they will meet at a luncheon. The final board meeting will take place Wednesday morning. The Executive Committee will meet immediately following this Board of Directors meeting.

The Annual Dinner of the Institute will be held Wednesday evening, November 11, in the Grand Ball Room of the Stevens Hotel. There will be no speakers. A program of entertainment is being arranged through the same entertainment agency that provided the talent for the sponsors of the entertainment at the annual meeting held in Los Angeles last year. There will be no seating or table assignments. Tickets may be obtained at the registration desk at a cost of $5 per person.

During the convention numerous Institute elections are to take place, including those for the general body and for the Divisions of Production, Marketing and Refining.

Forty-six seats on the Board of Directors are to be filled. The Board of Councillors, which nominates candidates for election to the Board of Directors, will meet Tuesday morning, November 10, in the North Ball Room at the Stevens Hotel, to make nominations. The directors will be elected by the Institute membership at the general session Tuesday afternoon.

Twenty members are to be elected to the general committee of the Division of Production, and a like number

PROGRAM FOR GENERAL SESSIONS

TUESDAY, NOVEMBER 10 AT 2:30 P. M.
Grand Ball Room

Presentation of Accident-Prevention Certificate Awards.

Report of Board of Councillors and Election of Directors.

Address:
Axtell J. Byles, American Petroleum Institute.

Address:
Baird H. Markham, American Petroleum Industries Committee.

Address:
Hon. Ernest O. Thompson, Chairman, Texas Railroad Commission; Chairman, The Interstate Oil Compact Commission.

WEDNESDAY, NOVEMBER 11 AT 2:30 P. M.
Grand Ball Room

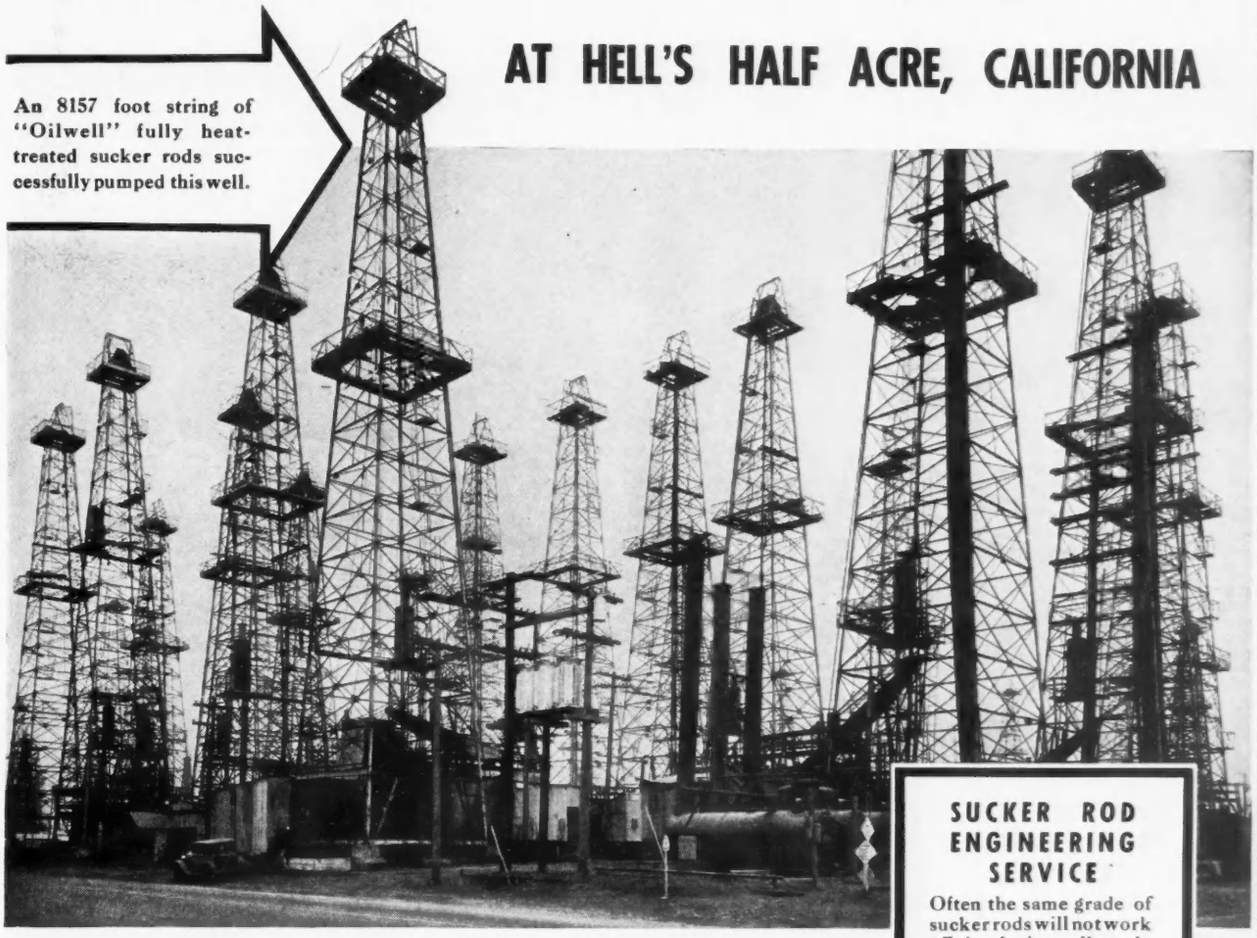
Address:
Dr. Hugh S. Taylor, Professor of Chemistry, Princeton University.

Address:
Hon. Samuel B. Pettengill, Member of Congress, Third District of Indiana.

"OILWELL" *Sucker Rods pump World's Deepest Pumping Well*

AT HELL'S HALF ACRE, CALIFORNIA

An 8157 foot string of "Oilwell" fully heat-treated sucker rods successfully pumped this well.



"OILWELL'S" alloy steel fully heat-treated Sucker Rods are the strongest manufactured. Rods made from steel of the same analysis but not fully heat-treated have a lower tensile strength, and correspondingly lower fatigue and impact values.

Remember — that normalized, *quenched* and drawn fully heat-treated Sucker Rods are made only by "Oilwell". Our exclusive process is protected by basic process, product and equipment patents.

SUCKER ROD ENGINEERING SERVICE

Often the same grade of sucker rods will not work efficiently in wells only 100 yards apart. Now "Oilwell's" metallurgically and mechanically trained Sucker Rod Engineers can analyze the many pumping problems and specify the grade of sucker rod you need. Call on them to help you get the greatest efficiency in your pumping.

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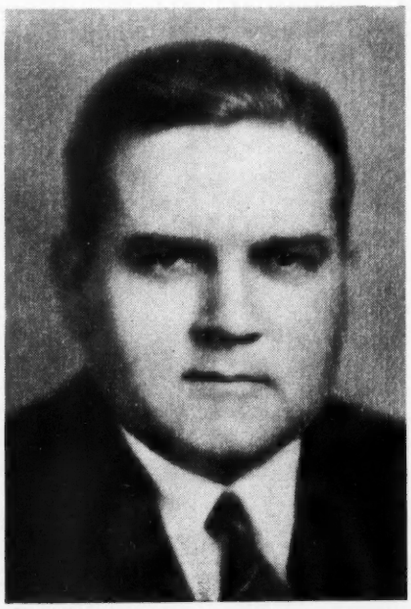
The proof of "OILWELL" quality is improved service

In Charge of A. P. I. Division of Production Activities

CARL A. YOUNG is secretary of the Division of Production and also director of the Division of Standardization of the American Petroleum Institute, with headquarters in Dallas. Young was born June 18, 1888, at Minneapolis. He had wide experience, both in domestic and foreign fields, in the supply end of the oil business, being associated with Lucey Manufacturing Corporation over a period of years. In 1917 he became vice president of the company, but resigned in 1924 to accept the directorship of the Division of Standardization of the American Petroleum Institute. When the Institute was reorganized in 1929, he also was appointed secretary of the Division of Production.



GEORGE A. HILL, JR., president of Houston Oil Company of Texas, Houston, concluding his second year as chairman of the Division of Production of the American Petroleum Institute, was born at Corsicana, Texas, January 12, 1892. He graduated from Texas University in 1911, and immediately entered the law business. In 1917, he went with Houston Oil Company as one of its general attorneys in the firm of Kennerly, Williams, Lee and Hill. Later he became general counsel for the company. In 1925, he was made vice president and director of Houston Pipe Line Company, a subsidiary concern. Later, Hill was appointed executive vice president and director of the parent company, which position he held when elected president in the fall of 1932.

JERRY E. STILLWELL, engineer for the Division of Production of the American Petroleum Institute, was born November 16, 1887, at Erie, Kansas, and is a graduate of the University of Kansas. He was with The Empire Companies, Bartlesville, Oklahoma, from 1916 to 1920, when he became instructor in the Department of Mechanical Engineering at the University of Arkansas. From 1922 to 1924, he was gas engineer for Gypsy Oil Company at Tulsa and later was with Northeastern Ohio Gas Company in the same capacity. He joined the Institute in 1926.

BLAINE B. WESCOTT, Gulf Research and Development Corporation, Pittsburgh, Pa., is chairman of the Division of Production program committee for the annual A. P. I. meeting in Chicago. Dr. Wescott, born at Syracuse, N. Y., July 7, 1895, graduated from Syracuse University and the University of Pittsburgh. After being engaged in industrial metallurgical research at Mellon Institute for six years, he entered Gulf Oil Corporation's newly organized research department in June, 1927

to both the Division of Marketing and Division of Refining.

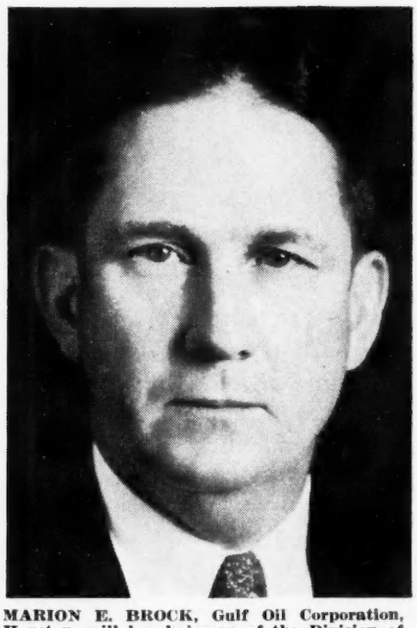
M. E. Brock, Gulf Oil Corporation, who is chairman of the Division of Production nominating committee, will make his report at the group session to be held Thursday morning, and the election will follow immediately. The Division of Refining, with Arthur E. Pew, Jr., Sun Oil Company, chairman of the nominating committee, will be holding its election at the same time. The Division of Marketing, of which George A. Perryman, Socony-Vacuum Oil Company, is chairman of the nominating committee, will hold its election Wednesday morning.

Many Production Meetings

A wide variety of topics dealing with subjects and operations of primary importance and current interest will feature the Division of Production program, which includes four group sessions and 30 committee meetings.

The first group session of the Division of Production will be held Tuesday evening and will be devoted to a discussion of materials or metals used in this branch of the industry. Three speakers are to appear at this session, which is sponsored by the Central Committee on Drilling and Production Practice. C. W. Froome, Union Oil Company of California, will be the presiding officer.

The following papers will be read: "The Relation of Mechanical Testing



MARION E. BROCK, Gulf Oil Corporation, Houston, will be chairman of the Division of Production's Nominating Committee at the American Petroleum Institute's annual meeting. The committee will report at the Production group session Thursday morning, November 12. Brock, who was born September 14, 1885, at West Mississippi, moved to Texas in 1903. Until 1912 he was in the banking business at Beaumont, when he entered the employ of the Gulf Companies as chief clerk of the law department. Later, he became district manager of the Beaumont territory, and subsequently was transferred to the executive department. He now is assistant to the executive vice president with headquarters in Houston.

Announcing

TRINITY

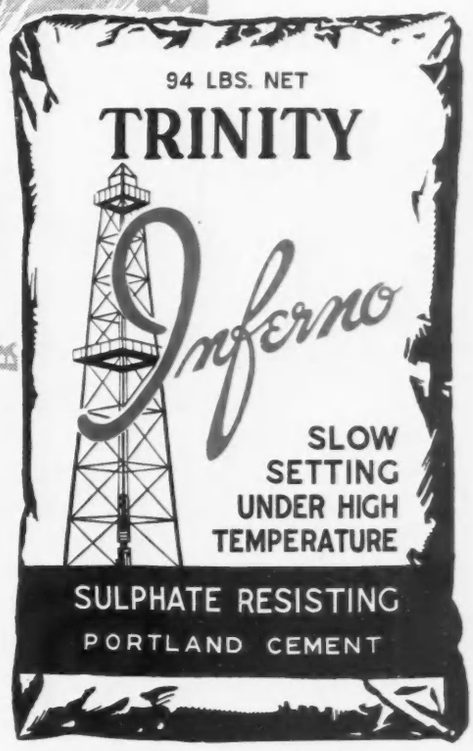
INFERNO

Sulphate Resisting

PORTLAND CEMENT

SLOW SETTING UNDER HIGH TEMPERATURE

Designed for Deep Well Cementing



● After exhaustive research and tests made at the request of leading oil companies in collaboration with their technical men, Trinity Portland Cement Company has perfected, and now introduces, "INFERNO," the Slow-Setting, Sulphate-Resisting Portland Cement made especially for High Temperatures encountered in deep-well cementing. A *true* Portland Cement, with no admixtures, "INFERNO" is as easy to mix as standard Portland Cement, and has the viscosity, pumpability or fluidity so desired by oil men. It sets slowly, yet hardens quickly, developing a high strength within one day. Try "INFERNO" on your next job—see for yourself the advantages "INFERNO" gives.

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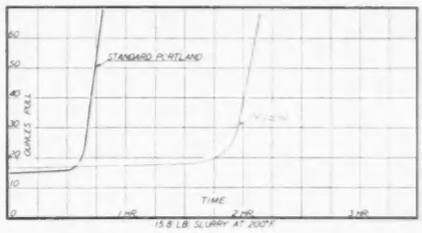
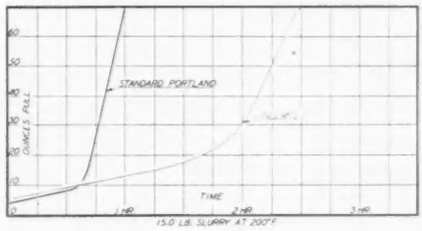
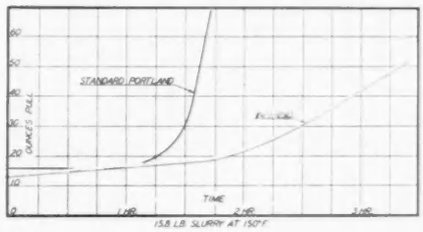
AVERAGE SETTING TIME OF INFERNO CEMENT SLURRY
Using Vicat Needle in Hot Water

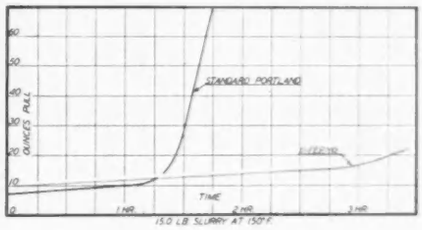
15.8 lbs. per gal 44% water		Temperature in Degrees F.	15.0 lbs. per gal. 54% water	
Initial Set	Final Set		Initial Set	Final Set
3 hrs. 5 min.	4 hrs. 0 min.	200	3 hrs. 15 min.	4 hrs. 10 min.
2 hrs. 40 min.	3 hrs. 8 min.	150	3 hrs. 0 min.	3 hrs. 35 min.
3 hrs. 20 min.	4 hrs. 20 min.	100	4 hrs. 5 min.	5 hrs. 5 min.
5 hrs. 50 min.	8 hrs. 0 min.	70	8 hrs. 25 min.	10 hrs. 40 min.

Comparative Fluidity of "INFERNO" Cement Slurrys at High Temperatures

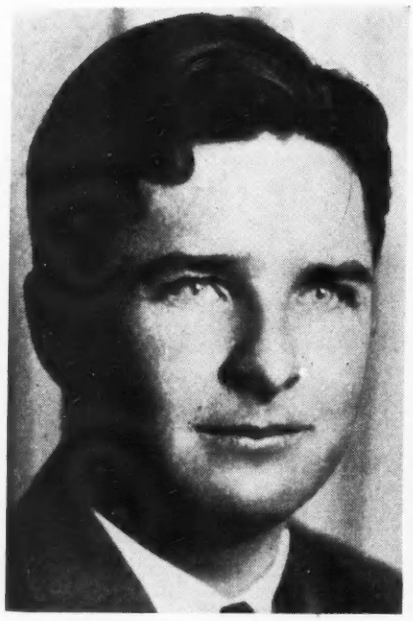








Presiding Officers At Division of Production Group Sessions



T. V. MOORE, Humble Oil & Refining Company, Houston, will be the presiding officer at the Division of Production group session Thursday afternoon, November 12 at the Seventeenth Annual Meeting of the American Petroleum Institute at Chicago. Moore was born September 5, 1907, at Omaha, Nebraska. He received the degree of Bachelor of Science from Virginia Military Institute in 1925, the degree of Bachelor of Arts from Rice Institute in 1926, and the degree of Master of Science from Massachusetts Institute of Technology in 1929. Moore has been associated with Humble Oil & Refining Company since 1927, having served as chemical engineer in 1927 and 1928, as research engineer from 1929 to 1933, and since 1933 as head of the production research department.

C. W. FROOME, Union Oil Company of California, Santa Fe Springs, California, will be the presiding officer at the Division of Production group session Tuesday evening, November 10, in connection with the American Petroleum Institute's Seventeenth Annual Meeting in Chicago. Froome, who is supervisor of field shops and drilling tool maintenance, has been actively engaged in drilling and production operations for Union Oil Company of California for 15 years.

JOHN T. HAYWARD, Barnsdall Oil Company, Tulsa, will preside at the Division of Production group session on Thursday morning, November 12, during the American Petroleum Institute annual meeting in Chicago. Hayward was born in Liverpool, England, in 1890. After graduating from Liverpool College, Seafield Park Engineering College and Liverpool University, he was construction engineer for Moreni Pipe Line & Trading Company in Roumania in 1911. A year later, Hayward was field manager at Bordeni, Roumania, for Central Oil Fields, Ltd. In 1916, he became field superintendent in charge of several fields for Roumanian Consolidated Oil Field, Ltd. After the World War, he became general manager of the company, but resigned in 1924 to practice as a consulting engineer. He came to the United States in 1927 as chief engineer of Phoenix Oil Fields, Ltd. In 1929, he joined Shell Petroleum Corporation, Tulsa, as engineer; resigning in 1931 to become chief engineer for Barnsdall Oil Company.

to Steel Performance," by William Howard Clapp, California Institute of Technology; "Vanadium Steels for the Oil Industry," by Jerome Strauss and A. W. Demmler, Vanadium Corporation of America; and "Molybdenum in Modern Oil-Drilling and Production Equipment," by John E. Wilson, Climax Molybdeum Company.

Wednesday morning there will be another group meeting of the Division of Production, at which time fundamental research on petroleum will be the general topic. Again, three speakers are to be heard. The presiding officer will be Fred E. Wood, Standard Oil Company of Indiana.

The following papers will be read: "Formation Volumes and Energy Characteristics of Gas-Cap Material from Kettleman Hills Field," by W. N. Lacey and B. H. Sage, California Institute of Technology; "Means of Recognizing Source Beds," by Parker D. Trash and H. Whitman Patnode, U. S. Geological Survey; and "Present Status of the Hypothesis of Biogenesis of Petroleum" by Lews A. Thayer, Centenary College of Louisiana.

The next meeting of the division will be Thursday morning, when two papers on drilling materials and another on obtaining samples from the bottom of oil wells will be heard. J. T. Hayward of Barnsdall Oil Company will preside.

The following papers will be read: "Investigations of Angle Columns as Used for Derrick Legs", by S. B. Settle, The Parkersburg Rig and Reel Company; "Importance of Compression Yield Strength in Establishing Setting Depths for Casing," by T. McLean Jasper, A. O. Smith Corporation; and "New Apparatus for Securing and Examining Sub-Surface Samples of Oil," by Paul G. Exline, Gulf Research and Development Company.

The final meeting as a group of the Division of Production will be held Thursday afternoon and will be devoted to important producing topics. T. V. Moore, Humble Oil & Refining Company, will be the presiding officer at this session.

The following papers will be read at this session: "A Preliminary Investigation of Flowing Wells," by Emory Kemler and G. A. Poole, Gulf Oil Corporation; "An Oil-Well Pump Dynagraph," by Walton E. Gilbert, Shell Oil Company; "Quantitative Determination of the Connate-Water Content of Oil Sands," by Howard C. Pyle and P. H. Jones, Union Oil Company of California; and "Porosity and Saturation Methods," by Kenneth B. Barnes, Gulf Oil Corporation.

There will be 30 committee meetings among the Division of Production men. Ten of these meetings will be devoted to standardization of oil field equipment. There will be nine meetings dealing with drilling and production practices, among these rotary drilling muds and well spacing are considered outstanding. There will be various other committee meetings to round out the program.

Refinery Division Meetings

The Division of Refining will hold three group sessions, at which a variety of topics of interest to refiners will be discussed.

The first session will be Wednesday morning, when several economic problems will be discussed. The papers at this meeting will be on the economic significance of cracking, rational utilization of crude oil and its distillates, and stability of residual products. These papers will show how completely the petroleum refining industry has been transformed from the days when it consisted of simple distillation to obtain fractions suitable for various commercial uses.

The next meeting of the refining division will occur Thursday morning and will be devoted to two important automobile lubrication studies. One will be on the requirements for lubricants for automotive gears and rear axles, and the

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of decreasing the efficiency of BJ Tongs and BJ Elevators by using "bootleg" or homemade replacement parts.

A tong die which does not take a sure, safe grip is dangerous—a nail used to hold on the elevator latch can easily drop out high in the derrick and injure an operator, but . . .

Another danger is to your pocket-book! With imitation parts you cannot hope for "new elevator" performance—you cannot expect long life from tong dies—you slow up the handling of tongs and elevators and subject them to excessive wear by using parts which do not fit accurately!

Genuine BJ Replacement Parts are Better—are Safer—Cost Less in the Long Run—Why Take Chances?

LUBRICATED HINGE PINS

A standard grease gun connection in the top forces lubrication to follow the spiral-cut grooves, and insures simple and complete lubrication. Boxed and sealed for your protection!

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Only BJ can make tong dies which fit accurately and "stand the gaff" of speed and rough usage found in present day drilling operations.

All types are packed in sealed boxes to guard you against imitations. In the BJ Catalog, or on Page 307 of the 1936 Composite Catalog you will find details of remarkable savings when you buy in quantity.

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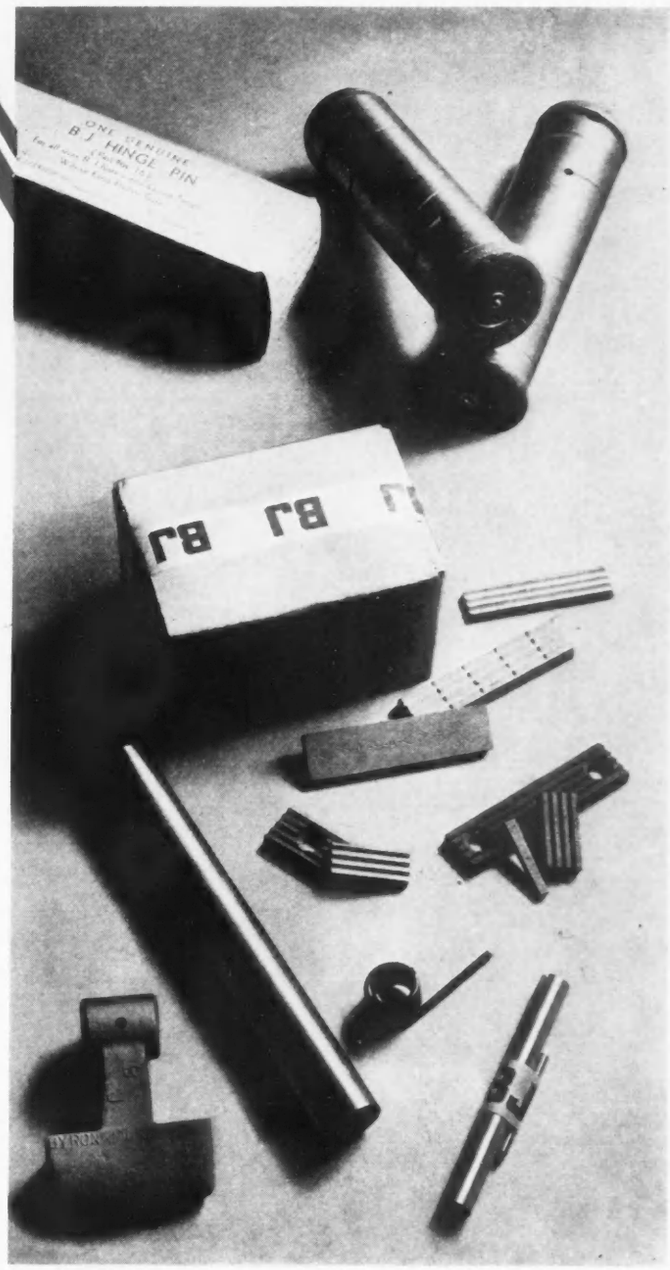
BJ Latches—Latch Pins and Hinge Pins are made of steels suited to the service they must perform. They fit with an exactness which insures "new elevator" performance. BJ Latch Springs are correctly made of proper materials and lacquered to prevent deterioration. Savings here, also when you buy in dozen lots!



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THE AMERICAN PETROLEUM EQUIPMENT SUPPLIERS' ASSOCIATION
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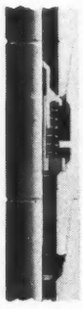
First Course

DRILLING WELLS IN WITH

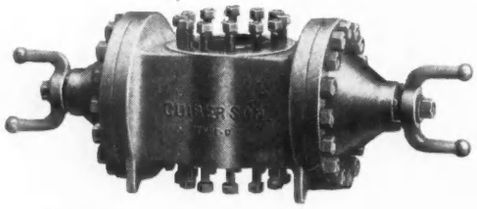
GUIBERSON
Type "A"
Friction Kelly
Drives

GUIBERSON
Underreamers

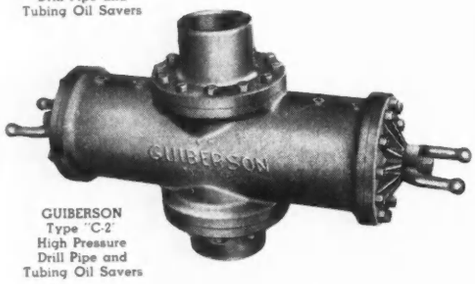
GUIBERSON
Type "E"
Disc Bits



GUIBERSON
Float Valves



GUIBERSON
Type "D"
High Pressure
Drill Pipe and
Tubing Oil Savers



GUIBERSON
Type "C-2"
High Pressure
Drill Pipe and
Tubing Oil Savers

Not

The ANNUAL A.P.I. "FROM SOUP BUT LET GUIBERSON OIL SERVE YOU FROM GRASS-ROOTS

Second Course

BRINGING IN WELLS WITH

GUIBERSON
Type "A"
Tubing and
Casing Swabs

GUIBERSON
Type "K"
Tubing and
Casing Swabs

GUIBERSON
Type "D"
Wire Line
Oil Savers

. . . . . PACKING OFF,

GUIBERSON
Type "C"
Control Head
Packers

GUIBERSON
Type "G"
Control Head
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THE GUIBERSON

TULSA, OKLA. WICHITA, KAN. PAMPA, TEX. BOX 1106, DAL

CARLSBAD, N. M. BIG SPRING, TEX. SEE YOUR COMPOS

BANQUET MENU
TO NUTS"
THESE
FIELD SPECIALTIES
UR WELLS
THROUGH PRODUCTION

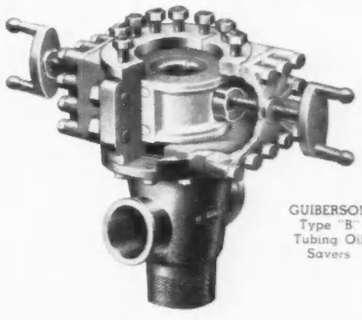
Fifth Course

RUNNING, PULLING TUBING AND RODS WITH

GUIBERSON Type "A-1" Floor Blocks

GUIBERSON Type "C" Sucker Rod Strippers

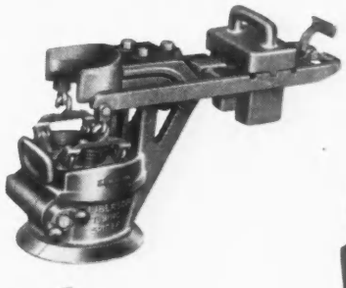
GUIBERSON Type "C" Tubing Oil Strippers



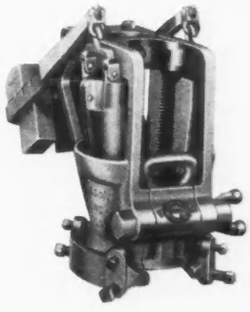
GUIBERSON Type "B" Tubing Oil Savers

Fourth Course

PROTECTING TUBING AT TOP AND BOTTOM WITH



GUIBERSON "Medium Type" Tubing Spiders For Tubing up to 5,000 feet



GUIBERSON "Heavy Type" Tubing Spiders For Tubing at any depth

GUIBERSON Lateral Spring Anchor For All Catchers

GUIBERSON Type "E" Tubing Catchers For Wells Over 4,000 feet

GUIBERSON Type "B" Tubing Catchers For Wells Under 4,000 feet

. . . Third Course . . .

CONTROLLING AND PLUGGING BACK WELLS WITH

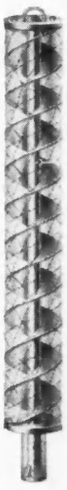
GUIBERSON Type "GT" Control Head Packers

GUIBERSON Control Head Type "GL" Liner Packers

GUIBERSON Type "F" Tubing Packers

GUIBERSON Spiral Tubing Packers

GUIBERSON Spiral Casing Packers



GUIBERSON Bottom Hole Plugs

CORPORATION

LAS, TEXAS **CASPER, WYO.** **NEWARK, OHIO** **NEW YORK CITY, N. Y.**

TE CATALOG **LOS ANGELES, CAL.** **OKLAHOMA CITY, OKLA.**

Speakers At A. P. I. Division of Production Group Sessions

Wm. Howard Clapp

W. N. Lacey

Lewis A. Thayer

Paul G. Exline

Samuel B. Settle

B. H. Sage

other on the lubrication of the newer bearing materials. Another paper at this session will be on the analysis of passenger-car registrations.

The final meeting of refiners will be held Thursday afternoon, when research projects will be discussed. The accomplishments of the Cooperative Fuel Research Committee will be reviewed, and the latest developments dealing with the composition of lubricating oils will be heard. Another paper of importance will analyze the Institute's corrosion records and discuss corrosion protection in refineries.

T. McLean Jasper

Parker D. Trask

Marketing Division Meetings

Only two group sessions will be held by the Division of Marketing. The first, which is to be held Tuesday evening, will be devoted to automotive transportation, and will include three papers on trucking of petroleum products.

The other marketing meeting will be held Wednesday morning and will be turned over to a discussion of marketing problems, trends and legislation.

PROGRAM FOR PRODUCTION SESSIONS

TUESDAY, NOVEMBER 10 AT 8 P. M.
South Ball Room

MATERIALS:

(Sponsored by the Central Committee on Drilling and Production Practice.)
Presiding: C. W. Froome, Union Oil Company of California.

The Relation of Mechanical Testing to Steel Performance.
William Howard Clapp, California Institute of Technology.

Vanadium Steels for the Oil Industry.
Jerome Strauss and A. W. Demmler, Vanadium Corporation of America.

Molybdenum in Modern Oil-Drilling and Production Equipment.
John E. Wilson, Climax Molybdenum Company.

WEDNESDAY, NOVEMBER 11 AT 9:30 A. M.
South Ball Room

FUNDAMENTAL RESEARCH:

(Sponsored by the Central Committee on Drilling and Production Practice.)
Presiding: Fred E. Wood, Standard Oil Company (Indiana).

Formation Volumes and Energy Characteristics of Gas-Cap Material from Kettleman Hills Field—A.P.I. Research Project 37.
W. N. Lacey and B. H. Sage, California Institute of Technology.

Means of Recognizing Source Beds—A.P.I. Research Project 4.
Parker D. Trask and H. Whitman Patnode, U. S. Geological Survey.

Present Status of the Hypothesis of Biogenesis of Petroleum—A.P.I. Research Project 5.
Lewis A. Thayer, Centenary College of Louisiana.

THURSDAY, NOVEMBER 12 AT 9:30 A. M.
South Ball Room

DRILLING PRACTICE:

(Sponsored by the Central Committee on Drilling and Production Practice.)
Presiding: J. T. Hayward, Barnsdall Oil Company.

Investigation of Angle Columns as Used for Derrick Legs.
S. B. Settle, The Parkersburg Rig and Reel Company.

Importance of Compression Yield Strength in Establishing Setting Depths for Casing.
T. McLean Jasper, A. O. Smith Corporation.

New Apparatus for Securing and examining Subsurface Samples of Oil.
Paul G. Exline, Gulf Research and Development Company.

Report of Division's Nominating Committee.
M. E. Brock, Gulf Oil Corporation, Chairman.

Election of Twenty Members of the General Committee of the Division of Production.

THURSDAY, NOVEMBER 12 AT 2:00 P. M.
South Ball Room

PRODUCTION PRACTICE:

(Sponsored by the Central Committee on Drilling and Production Practice.)
Presiding: T. V. Moore, Humble Oil & Refining Company.

A Preliminary Investigation of Flowing Wells.
Emory Kemler and G. A. Poole, Gulf Oil Corporation.

An Oil-Well Pump Dynagraph.
Walton E. Gilbert, Shell Oil Company.

Quantitative Determination of the Connate-Water Content of Oil Sands.
Howard C. Pyle and P. H. Jones, Union Oil Company of California.

Porosity and Saturation Methods.
Kenneth B. Barnes, Gulf Oil Corporation.

T-I-W Screen

SETTING ASSEMBLIES

Hold down slip anchors to casing

• • • ELIMINATING ANY DANGER OF LINER BLOWING UP in the HOLE

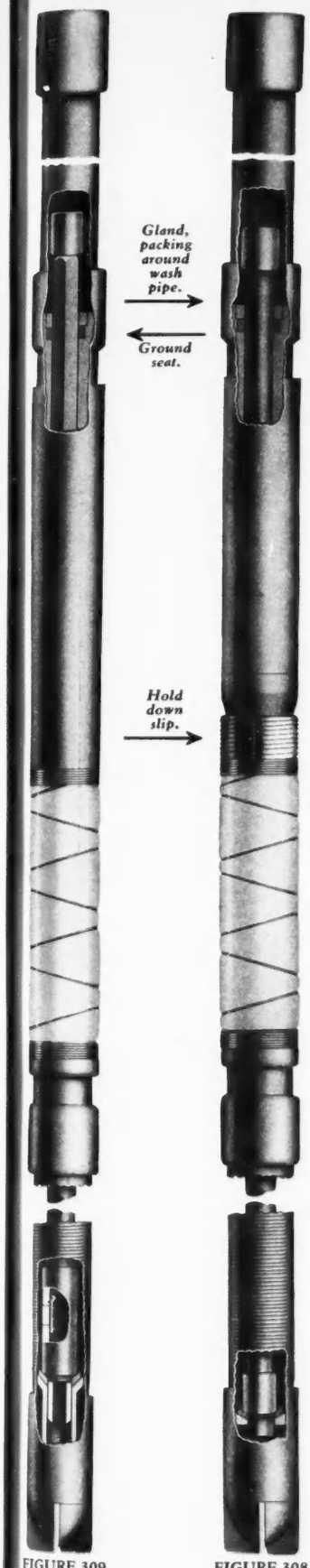


FIGURE 309

FIGURE 308

Figure 308, showing T-I-W liner packer with hold down slips, screen, regular type back pressure valve and wash pipe. (Hold down slips are optional with the user, it being added to our regular liner packer.)

Figure 309, showing setting tool, T-I-W liner packer, screen, triple seal back pressure valve, flow-back valve, and wash pipe. Note the small Kelly at the top of wash pipe which rotates with setting tool, which in turn rotates wash pipe closing triple seal back pressure valve.

PATENTED FLOW-BACK VALVE

. . . is used only in wash pipe when setting screen with tubing and setting tubing on ground seat at top of packer. The flow-back valve is closed while washing well, returns going through wash pipe and back pressure valve, but when well comes in, flow comes through screen through flow-back valve to inside wash pipe and up through tubing. Flow-back valve is same O.D. as wash pipe coupling, and can be placed at any point in wash pipe, but is preferably placed near bottom, which causes the flow to come from the bottom of well, eliminating a high gas oil ratio.

Be Safe - Be Sure

SPECIFY . . . T-I-W . . .

TEXAS IRON WORKS

1401-1423 Maury Street HOUSTON, TEXAS

The Gulf Coast as A Deep Oil Reserve

By BRAD MILLS, Associate Editor

THE oil reserves of the Texas-Louisiana Gulf Coast represent about 16 percent of the nation's reserve, but the 2,000,000 barrels of oil now in sight does not reflect the true potentialities of the vast coastal belt extending from Matagorda Bay to the Mississippi state line. This strip of land is more than 125 miles wide, 400 miles long, and involves an area the size of Arkansas, Iowa or Louisiana. It is one of the longest unbroken districts in the world that is considered definitely favorable for oil production at reasonable intervals and depths.

The accompanying paper was presented before the Gulf Coast chapter of the American Petroleum Institute Division of Production, October 20, 1936, at Houston.

THE thickness of possible oil-bearing sediments along the Gulf Coast was not fully appreciated until a few years ago, and even now the depth to the basement is the subject of considerable speculation. The fact that the Tertiary beds rapidly thicken toward the coast line gives a thickness that may never be entirely penetrated. The inaccessibility of the formations immediately above the basement apparently places the entire group of available formations in the favorable classification. The thickening of the formations toward the coast line, plus a fairly uniform dip with little loss of surface elevation combine to assure a thickness of favorable sediments that has no practical limits.

In arriving at a reasonable estimate of reserves, four classifications should be considered. Past experience makes it possible to determine the approximate recoverable oil in zones that are known to resemble more fully developed sands, but in the newer fields estimates may prove inaccurate. Thus, it is possible to arrive at fairly satisfactory estimates of reserves in a few partially developed fields. The possibility of deeper producing zones than have been found is a confusing angle, since it is possible that still deeper production will be found in a few fields now under development. The four classifications ordinarily considered in arriving at the amount of oil in any producing district are:

1. Old zones in the process of development.
2. Known deeper zones not developed.
3. New undeveloped fields.
4. Unknown reserves as yet undiscovered.

The fourth classification is the one most often attacked, yet it is perhaps the most important of the four.

Forty-three fields in the 30,000,000-acre strip designated as the Texas-Louisiana Gulf Coast oil belt have had recoveries in excess of 10,000 barrels per acre. All these fields still are producing and their ultimate recoveries per acre will be substantially greater, and additional fields will be added to the list. Twenty-six of the 43 fields are located in Texas. Of outstanding importance is the production of more than 250,000 barrels per acre in two of the fields, and there are four others that have yielded more than 100,000 barrels per acre.

The Gulf Coast now has 102 producing fields, of which 63 are in Texas and 39 are in Louisiana. Several new fields have been found since January 1, but no major discovery has been made. Reserves added during the year total less than 100,000,000 barrels.

The Gulf Coast offers unusual opportunities for development of oil at record depths. The great thickness of favorable formations, good drilling conditions, and a probably high percentage of producing structures below 8000 feet place the district in a very strong position for testing levels formerly regarded as prohibitive. Few sections of the world are favored with a comparable thickness of sediments that definitely fall in the productive classification, and intensive development in the future will undoubtedly result in the discovery of many fields in areas that have been shallow producers for 20 or 25 years. The wide range of opportunities and continued success of operators who are confining their activities to deeper prospects have attracted the attention of producing companies of every size.

From a standpoint of future possibilities the Texas and Louisiana Gulf Coast ranks among the foremost areas in the world. It is anticipated that few, if any, regions carry oil producing formations as deep and that few have as many different oil-bearing horizons. These factors will bring the territory more and more into the limelight in the future.

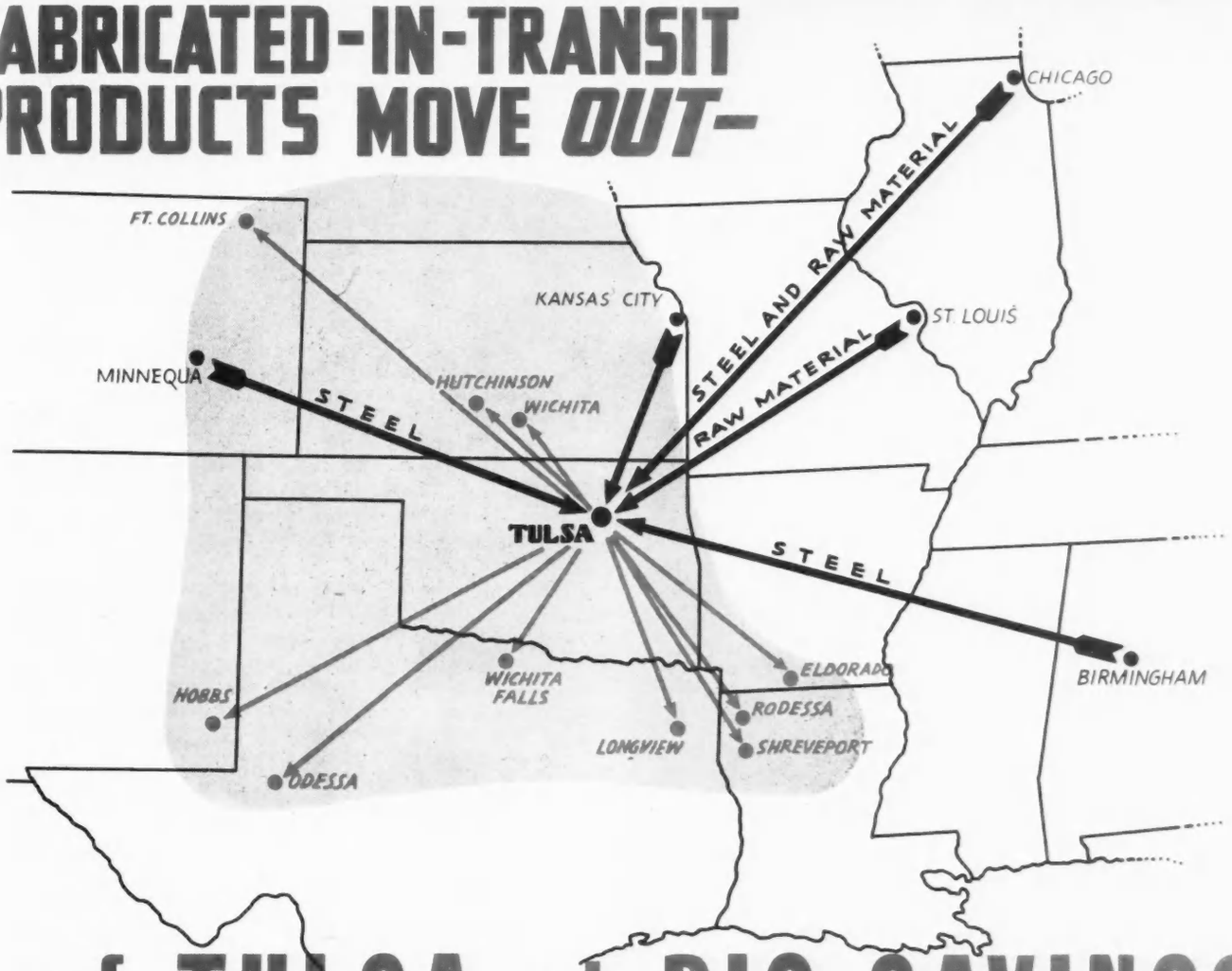
As pointed out by Deussen, the tectonics and geologic history of the Gulf Coast are extremely favorable for the occurrence of an indefinite number of structures in which oil may have accumulated. The geologic section contains a great number of oil-bearing horizons at depths to which, in the light of present information, it will be possible to drill.

Not only new structures and new localities will contribute additions to the oil reserves of the Texas-Louisiana Gulf Coast in the future, but likewise deeper producing sands in the present fields will unquestionably yield large additional amounts of oil.

The existence of a great geosyncline along the

STEEL AND RAW MATERIALS MOVE *IN-*

FABRICATED-IN-TRANSIT PRODUCTS MOVE *OUT-*



—of TULSA at BIG SAVINGS

IN DISTRIBUTION COSTS OVER LESS CENTRAL MID-CONTINENT AND GULF COAST POINTS

The Mid-Continent and Gulf Coast oil areas produce 71% of the Nation's petroleum, and this year the Mid-Continent alone (red area above) will spend for oil field equipment, $298,000,000. All other sections in the United States *combined*, will spend only $161,000,000.*

This means that every manufacturer of oil field equipment and supplies is directing his attention to this central and primary market.

The attention of California and Eastern manufacturers who do not fabricate in this area is called to the freight savings that can be made through a policy of fabricating in transit at Tulsa. There is obviously a great saving in freight as compared with shipping the finished product from the East or Pacific Coast. But Tulsa also offers a *substantial saving over fabrication at less central Mid-Continent or Gulf Coast points*, due to the fact that she is in line of transit to all Mid-Continent fields *at minimum cost* under railroad tariffs.

For example, on a 15,000 lb. item of equipment shipped to any field shown on the above map, the saving in freight for fabrication at Tulsa figures $49.00 as compared with fabrication at a less central oil city located in this area.

Tulsa has, under tariff filed with the Interstate Commerce Commission, transit privileges under which steel angles, channels, bars, etc., may be fabricated in transit at 2.2c per hundred pounds for transit privilege. When the manufactured article moves from transit point, freight bills for inbound movement of the steel are surrendered in an amount equal to the transit material in the outbound article.

Note Tulsa's central location with respect to both raw material sources and shipping destinations in the Mid-Continent. Her central location with regard to the Rocky Mountain, Gulf Coast and Eastern oil fields is also a pronounced advantage to the manufacturer establishing a branch factory at Tulsa.

Full details on this important subject will be gladly supplied by the Tulsa Chamber of Commerce Traffic and Industrial Departments.

***Oil and Gas Journal official estimate, figured in detail section by section.**

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coast line is generally recognized by leading geologists who have studied outcropping formations farther north and the thickening tendency toward the south. A geosyncline is nothing more than a great downward flexure of the earth's crust, and is the equivalent of a great valley or trough that has been filled with more recent sediments. The complete filling of this original basin and the gulfward movement of the coast line have placed the deepest part of the geosyncline somewhere near the present coast line. The accessibility of the deepest part of this tremendous fill assures a thickness of promising sediments that has no practical limit. Even if the bottom of the trough were a good distance gulfward from the present shore line, the strip along the coast would undoubtedly have a greater thickness of sediments than could be penetrated with present equipment and methods.

It may appear fantastic to speak of possible oil-bearing formations below 15,000 feet, but their presence assures a reserve thickness that encourages very deep drilling after the shallower formations have proved non-productive. Few comparable geosynclines or troughs exist, and perhaps none has a greater number of formations falling definitely in the promising classification.

The great basin, depression or trough becomes more pronounced in southeastern Louisiana than in southeastern Texas. The basement on which the possible oil-bearing sediments were deposited apparently was not warped down more than 6000 feet at Galveston; but near the mouth of the Mississippi River this basement or "floor" was warped down 15,000 to 18,000 feet. Since all this great depression is filled to the surface, it is easy to understand the thickening tendencies of sediments eastward along the coast from Houston.

If all regular Gulf Coast formations were transparent from the surface to 15,000 feet, it would be possible to see salt plugs and salt wedges of many shapes pointing upward. They would roughly resemble a series of mountains and hills and would reach upward to various levels within range of view. The higher salt domes reaching near the surface obviously would be most accessible.

Salt plugs, both sharp and blunt, were no respecter of formations. They apparently intruded to all levels above 15,000 feet below the surface, and were not at all particular about a stopping point. The fact that the tops of salt plugs along the Texas-Louisiana Gulf Coast have been found in the Recent, Pleistocene, Pliocene, Miocene, Oligocene and Eocene ages indicates that the very deep seated salt domes may prove the source of a great future oil supply. Already the intermediate type of deep seated salt dome has become an important factor.

The Spindletop period saw operators striving to develop production near the surface. Ten years later operators were attempting to develop production on and around deeper salt domes.

The second period was followed by the early geophysical phase of development. During this pioneering and experimental period, many fields were found without the aid of surface indications. It soon was evident that the Gulf Coast was dotted with a deeper layer of salt domes that gave no surface evidence of their existence. In striving to locate these salt domes, operators were influenced by the fact that most of the previous discoveries yielded oil from shallow depths. It was natural that shallow domes were both wanted and expected. In "shooting" for fields during the first phase of geophysical exploration, the objective level extended from the surface to about 4000 feet. Deeper salt domes were indicated by various "disturbances", but no attempt was made to classify them.

The second or intermediate stage of geophysical development recognized the possibility of deeper salt domes, and during that period efforts were centered on the 3000-6000-foot level. A number of deep-seated salt domes were indicated by results obtained, and subsequent development proved the importance of reserves below the accepted maximum depths of the previous production periods.

Developments of the past two years have given a new conception of the Gulf Coast as an oil reserve. Operators no longer think of the area as a shallow producer from the flanks of salt domes. Great low-lying structures in the form of deep-seated salt domes have been indicated, and with such fields as Conroe and Tomball to support the theory, it is reasonable to expect blanket production from coastal fields that will produce from formations above those productive at Conroe.

The evolution of salt dome development has been slow and tedious. It has been difficult to visualize a 15,000 or 20,000-foot thickness of sediments with a liberal sprinkling of salt domes at all levels; but as development advances it becomes increasingly apparent that production may be expected at all levels from near the surface to more than 15,000 feet.

Some of the large, low-lying structures along the Gulf Coast appear to be full of oil, while many of the shallower, sharper and better defined structures have produced little oil. The deep, non-piercement type fields offer the greatest possibility of a large and uniform producing area. A number of such indicated fields now are under development, and others are being sought where recent geophysical surveys indicated possible accumulations.

The Frio formation of the Oligocene is the principal objective of operators who hope to develop production around 8000 feet on deep-seated salt domes, but it does not follow that this zone is the last chance at an accessible depth. There are good reasons to believe that the Cockfield Upper Saline Bayou and Lower Saline Bayou of the Eocene will prove productive when they are reached on favorable structures. Both the Upper and Lower Saline Bayou produce oil at Batson, Hardin County, Texas, and nearer the coast they may be good producers.

The thickness of favorable deep formations along the coast line may be the determining factor in efforts to develop production below formations that are now productive. In going coastward from a marker 100 miles from the Gulf, the formations dip and thicken at different rates. The shallower formations dip at a much more gradual rate than the deeper formations. Such a condition may mean that the Cockfield and the Upper and Lower Saline Bayou are too deep to reach in the vicinity of Galveston, and certainly out of reach along the Louisiana Gulf Coast. Even with a sharp dipping and thickening tendency, these formations offer distinct possibilities a short distance from the coast line, or in areas that yield the Frio at a reasonable depth.

Although the Cockfield, Upper and Lower Saline Bayou formations have been reached in only a few areas along the coast line, it is reasonable to assume

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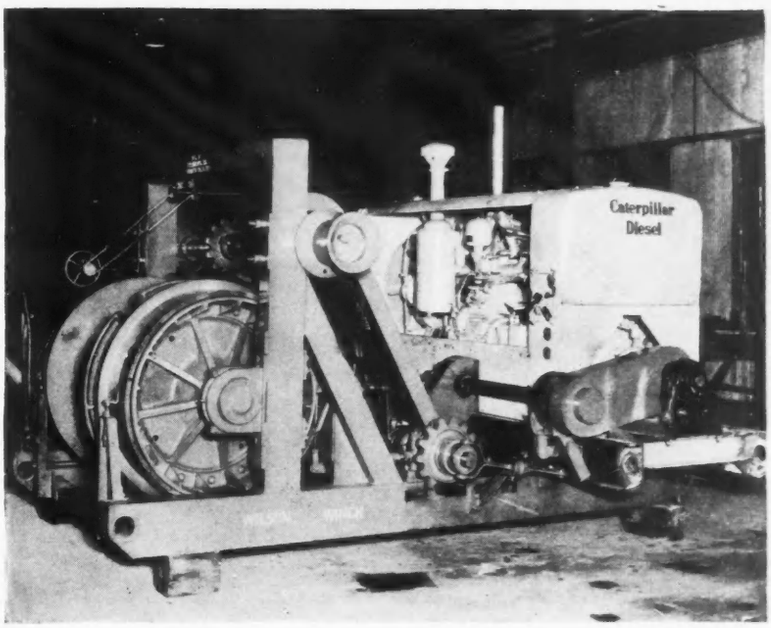

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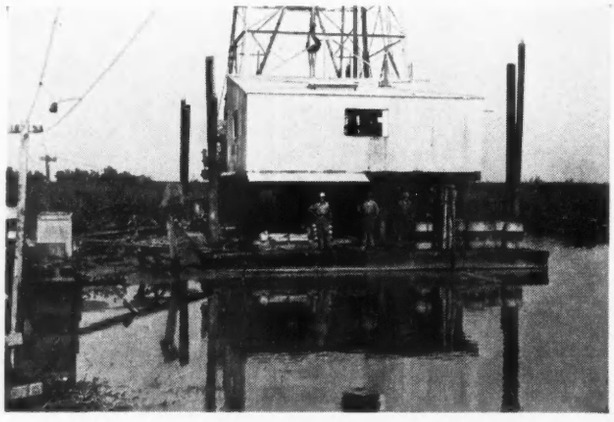
that they may prove productive in some sections. The very meager success in the Cockfield at Esperson, Eureka and Orchard does not condemn the formation along the Gulf Coast, particularly on the flanks of shallow salt domes that are producing from Miocene and Oligocene formations.



Development in the Mississippi delta involves the use of expensive floating equipment

Enough is not known of deep formations in South Louisiana to outline a drilling program with definite objectives below 10,000 feet. Eastward along the coast the formations dip rapidly, and zones that are accessible in the vicinity of Lakes Charles are entirely out of reach a short distance to the east. At Iowa the Marginulina formation is found at about 6700 feet, while at Roanoke, a short distance eastward, it is encountered at a depth of about 8700 feet. It is believed, however, that the Frio formation offers good possibilities in such fields as Iowa and Roanoke, and may prove productive in other areas nearby.

The thickness of formations that may prove productive along the Louisiana coast is so great that testing these zones becomes a matter of mechanics. Production in a number of fields in Terrebonne Parish is coming from the Upper Miocene sands, a condition that emphasizes the possibilities of the deeper Miocene and Oligocene formations that should be accessible in the entire district on decided uplifts.

Development along the Gulf Coast has been an interesting progression that involved several types of structures and a number of levels within each area. Prior to each major discovery, few operators would concede it was possible to produce oil under conditions that later prevailed in fields of a new type. It was generally believed by nearly all geologists that no oil would be produced north of the salt dome belt and along the Conroe trend, prior to the discovery of the Raccoon Bend field. Discovery of the Conroe field completely wrecked the theory and opened a vast strip to development, besides adding to the potentialities of the Yegua formations nearer the coast line.

As production shifted and new types of structures were found productive, a few of the most far-sighted operators and geologists recognized the possibility of production from a type of structure that could not be foreseen. Deep-seated salt domes were not recognized as a new source of production during the first part of the shallow, piercement type salt dome development period. Even flank production around salt domes that were producing from the cap rock was considered a very remote possibility.

A study of such new fields as Dickinson, Anahuac and Hastings reveals the tremendous possibilities of the coastal strip. Early activity was confined to the search for and development of shallow salt domes that gave some surface indication of their existence.

The cost of making a discovery along the Gulf Coast has become increasingly higher, but it does not follow that all discoveries in the future will be made at an unreasonable expenditure. The average cost will rise as new fields are found and as average depths increase, but the importance of future discoveries may offset the larger expenditures involved in the exploratory campaigns.

A reserve of over 2,000,000,000 barrels of oil is still in place along the Texas and Louisiana Gulf Coast as of July 1, 1936, and the two areas have produced around 1,240,000,000 barrels of oil. The Texas Gulf Coast by the end of the year should pass the billion-barrel mark in production. On October 1, 1936, the area had produced approximately 992,000,000 barrels since the first discovery at Spindle Top in 1901.

The South Louisiana district is especially promising, as proved by production at almost 10,000 feet in the Delta area. It is believed that the basement would be found above a depth of 30,000 feet, if it were possible to drill so deep.

Future development of a new type will depend largely upon the coordination between geophysics and engineering. Economics will play an important role, and the rate of progress necessarily will fluctuate as market demands rise and fall.

The extent and characteristics of production at very great depths depend chiefly upon two factors. They are

1. The nature of the objective formations.
2. The gas/oil ratio.

There are yet no evidences that such formations as the Frio and Cockfield will not continue to carry sand bodies at depths of 10,000 and 12,000 feet. It is generally conceded that as a formation is found at an excessive depth down dip or coastward, it tends to produce with a high gas/oil ratio. This does not mean that all very deep producing structures will yield only gas, although very light and unstable crudes may be expected below 10,000 feet in formations normally yielding a stable crude at 5000 or 6000 feet.

An entirely new type of structure on the Gulf Coast is a possibility. The great thickness of sediments and formations filling the great trough or basin along the coast line may account for a type of oil field unlike any yet discovered in the area. Due to the thickening necessary to fill the original basin to the surface, it is possible that a truncated condition has accounted for major oil accumulations in the heart of the salt dome belt. Formations not present 100 miles from the coast line may be found along the narrow coastal strip, since the sedimentation and filling tendency may have thrown in a number of new and unknown strata to bring the fill to the surface.

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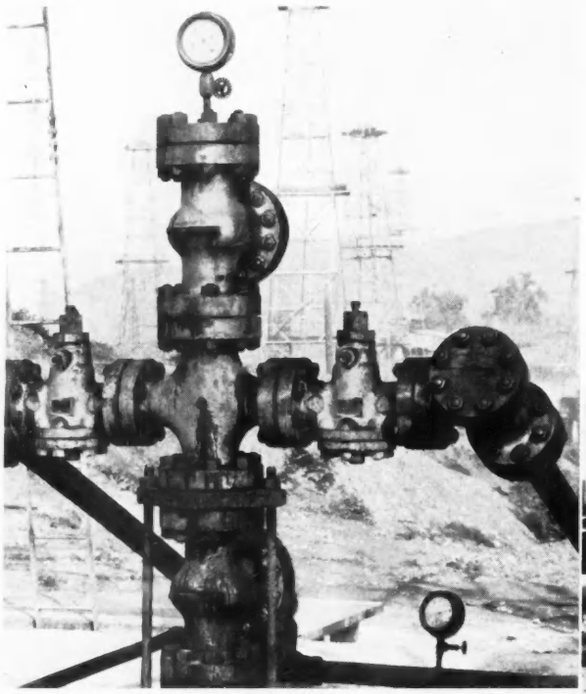

Above view shows Nordstrom Hypreseal Valves on Xmas tree at Baldwin Hills, Calif. Center view shows Nordstroms on gas lift lines at Kettleman Hills. The lower photo shows 130 Nordstroms, 2", on a tank manifold at Baldwin Hills.

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Maintenance of Field Gas Testing Equipment

By FRANK B. TAYLOR, Staff Writer

IN the accompanying article, which is another of the series being presented by The OIL WEEKLY on the practical care and maintenance of various pieces of oil field machinery, some important recommendations are made for handling gas testing equipment, which is vital to the proper measurement of natural gas volumes.

MEASUREMENT of natural gas volumes, of fundamental importance in main line transmission, distribution and purchase areas, is based upon factors obtained through tests made in producing sectors as well as along the line. These tests may be based either upon a regular program, or may be called for at unrelated intervals due to line load requirements. In any case, accuracy of the factors resulting from these field determinations is dependent largely upon the care exercised in maintaining the pieces of equipment being used.

The chief instrument of the field man in obtaining corrective factors for orifice meter calculation is the gravity balance. By far the most popular, and one that is recognized by State Bureaus of some producing states as being of precision performance, is the mechanical balance. Briefly, specific gravity is the weight of a given sample of gas, which is assumed to be representative of the whole, compared to a like quantity of air under the same conditions. The delicacy of this relationship makes mandatory the correct functioning of each piece of equipment used in the tests.

Unless a specific gravity balance is in more or less constant use, and then at regular periods, it should be checked for leakage before being used. Probably the best manner of proving the balance is to connect the manometer to one of the valves and to pull a vacuum of about the same number of millimeters of mercury as would be used during determinations. By closing off the pump valve, and having all other valves closed with the exception of the manometer control, any leakage will be indicated by a mercury drop in the manometer. Point of leakage is generally in the gasket at the head of the balance, and when the head has been removed a number of times, is usually due to folding. In such cases, the gasket can be shortened the necessary amount by cutting obliquely across the face. This gives a graduated thickness that results in a tight union with the setting of the head. Whenever available, a new gasket should be installed.

Leaks at valve bases should be soldered and reseated. Solder should be built up on the bead to at least one-quarter of an inch to withstand wrench strain in making connections. Acid core solder or other fluxing combinations may be applied more readily than solder alone.

If it is found that connections between hose and valve are not tight, the difficulty can usually be remedied by working the male end of the connection into the seat. In extreme cases, where deep cuts or scratches are evident, it may be necessary to reseat. It is seldom advisable to use abrasive materials other than cleansing compounds, as they have a tendency to cut brass. Reseating a small valve in this manner should be done without much pressure being applied. In ordinary operation hose connections having brass seats should not be tightly seated with a wrench as continued seating in the same position on apparatus of small diameter tends to produce leakage.

The same points of maintenance are applicable to other equipment used in gravity determinations in field setups. Instruments that have top gasket connections or that have sight apertures for reading the swing require the same precautions to assure tightness.

Manometers used with specific gravity equipment must frequently be cleaned as the mercury amalgamates with a number of elements, and in this form has a noticeable tendency to cling to the sides of the glass tube, making reading either difficult or inaccurate. Gasoline may properly clean a dusty or dirty manometer glass provided the murcury has not become amalgamated. When the latter is the case, a slight scum remains that must be removed before clean mercury is placed in the instrument. A solution of sulphuric acid with a few crystals of potassium dichromate added has been found satisfactory in most cleaning cases. When the condition is extreme, a weak solution of hydrofluric acid may be required. In handling this latter acid, care must be exercised, as its action is swift, and dangerous to animal tissue.

Packing around the top manometer connections should consist of material that does not have a tendency to become thin in warm weather. Soap, granulated rubber compounds and certain types of manufactured packing are ideally suited to the requirements. Both water and mercury manometers may be cleaned and the tube outlets packed in the same manner. In cutting glass to the correct lengths for various size manometers, the required length from the "U" should be measured and marked on the glass. The glass should be scratched at this point with a sharp file. By laying the tube on a flat surface, with the part to be discarded protruding be-

yond the edge, a single, sharp blow will break the glass at the desired place. Uneven edges can be smoothed with sandpaper. When heavy glass must be broken in this manner, it is often best to entirely circle the tube with the file scratch.

Both types of manometers should have the glass protected by thin metal shields that may be slipped into place over the end. For this purpose a shield can be formed that has an arch built into its construction, as its flexibility is increased considerably in this manner without sacrificing protection. Although both manometers and balances are of comparatively rugged construction, field work requires that they be handled more roughly than is permissible with other equipment of equal sensitivity.

The first act of the gas engineer in dismantling specific gravity equipment should be checking the locking device of the balance. All thumb screws should be tight to prevent undue jar while being moved.

In spite of all precautions, balance springs will be broken. An accidental movement while the equipment is being operated or while being set up may snap one of the fine, flexible springs. Replacing these parts in the field is a tedious task, seldom requiring less than one half day.

Most engineers set the balance upon the tripod and removing the face, draw the sliding unit free. Small blocks beneath the bulb and the balance rod indicator aid in removing the springs. In making replacements the tension of all springs should be as nearly equal as possible. If this condition is not gained, the swing of the indicator may be in an arc that will be unsatisfactory in determinations. With the tension removed from the springs not impaired, replacements may be affixed without moving the supporting blocks. When these are removed, final adjustments may be necessary before the swing is true.

On completion of spring replacement, the instrument should be set up and an average vacuum pulled. By freeing the indicator, the time required for a complete swing can be checked and adjusted to requirements. As few operators desire the same characteristics in a swing, the time limit is more or less optional with the individual, but should stay within the manufacturers' recommendations. It is almost an invariable fact that the replacement of springs requires adjustments of the time and balance control weights. Also, the difference in winter and summer operating conditions and line gravities may make seasonal adjustments of the balance necessary. It is general practice to set the instrument to balance the mercury column against vacuum and pressure at slightly different values in order to facilitate readings for plus or minus equations.

The most frequently used piece of equipment in the gas engineer's tools is the test gauge. It should be checked regularly with a dead weight balance, and adjusted as to calibration over the entire scale. Checking against a tested gauge that is not in service is indicative of accuracy but is not conclusive.

A gauge should not be tightly connected into a pressure tap with strain exerted on the case of the gauge. The inlet to the instrument should be protected with an adapter to fit the gauge and the most used pipe connection. Constructing adapters from hexagon steel allows a rest for a small wrench that can be used without endangering the gauge mechanism. In taking gauges readings, gas should be let slowly into the element by cracking the controlling valve. The tangent arm of the gauge indicator may be displaced a tooth or two by swiftly loading the element or by striking the case sharply against some object. Element fatigue may make replacement necessary, and this condition may be more swiftly reached if the gas being tested is high in hydrogen sulphide content than if the gas is sweet.

Hose used with all equipment should be tested frequently and the connections examined. When not in use hose is apt to crack and in certain sections of the country spare hose is kept in cellars. Wrapping hose around equipment tends to make it crack more swiftly than when it is free.

Gas bombs can best be checked for leakage by pressuring and soaping. Any leaks of ordinary size can be noted immediately. When such bombs must be shipped a considerable distance or held in storage before the gas is analyzed, the bomb can be loaded to a known pressure and allowed to stand for a day. A recheck of the pressure will indicate any pressure loss. Bomb control cocks must seat tightly and if lubricated with a packing, must be repacked regularly. A number of small bombs in use have screw connections on the cocks over which caps may be tightened as an additional precaution against leakage.

Bibliography of Articles on

CARE AND MAINTENANCE OF EQUIPMENT

Published in THE OIL WEEKLY Since January 1, 1936

	Page
True Valve Refacing Insured by Time Saving Idea and Line Pump Failures are Reduced....Jan. 13 By Elton Sterrett	34
Recent Research Studies Show Service of Rig Chains and Lines May Be Improved by Operators....Mar. 9 By Brad Mills	21
Locating Engine Failure—Repeated Pipe Line Station Trouble Overcome by Simple Procedure....Mar. 9 By Elton Sterrett	38
Maintenance of Communication Lines Operating in Oil Fields....Mar. 16 By Clarence A. Anderson	35
Lease Rehabilitation—Concrete Pumping Rig Floors and New Rod Line Swings Aid Efficiency....Mar. 23 By J. C. Albright	33
Pipe Line Delivery End Protection is Needed....Mar. 23 By Elton Sterrett	21
Cargo Hose Care and Maintenance....June 15 By George K. Bedur	44
Practical Means of Maintaining Large Gas Transmission Lines....June 22 By B. M. Laulkere	47
Care and Operation of Spudding Machines....July 6 By J. P. Witherspoon	40
Lowering Lifting Costs Through Well Studies....July 13 By Frank B. Taylor	51
Care and Maintenance of Sucker Rods....July 13	88
Performance Records on Production and Equipment Greatly Assist Well Operation....July 13 By Warren L. Baker	112
High-Grade Lubricating Oil Proved Good Investment by Large Gas-Lift Plant....Aug. 24 By J. C. Albright	32
Cathodic Protection of Tank Bottoms....Sept. 14 By Denis Sneigr	50
Unit Operation is Being Applied to Machinery Maintenance With Success....Aug. 17	50
Conditions that Caused Manifold Explosion Corrected by Simple Method....Sept. 21 By Elton Sterrett	28
Vacuum Grouting of Old Engine Bases....Oct. 5 By Elton Sterrett	47

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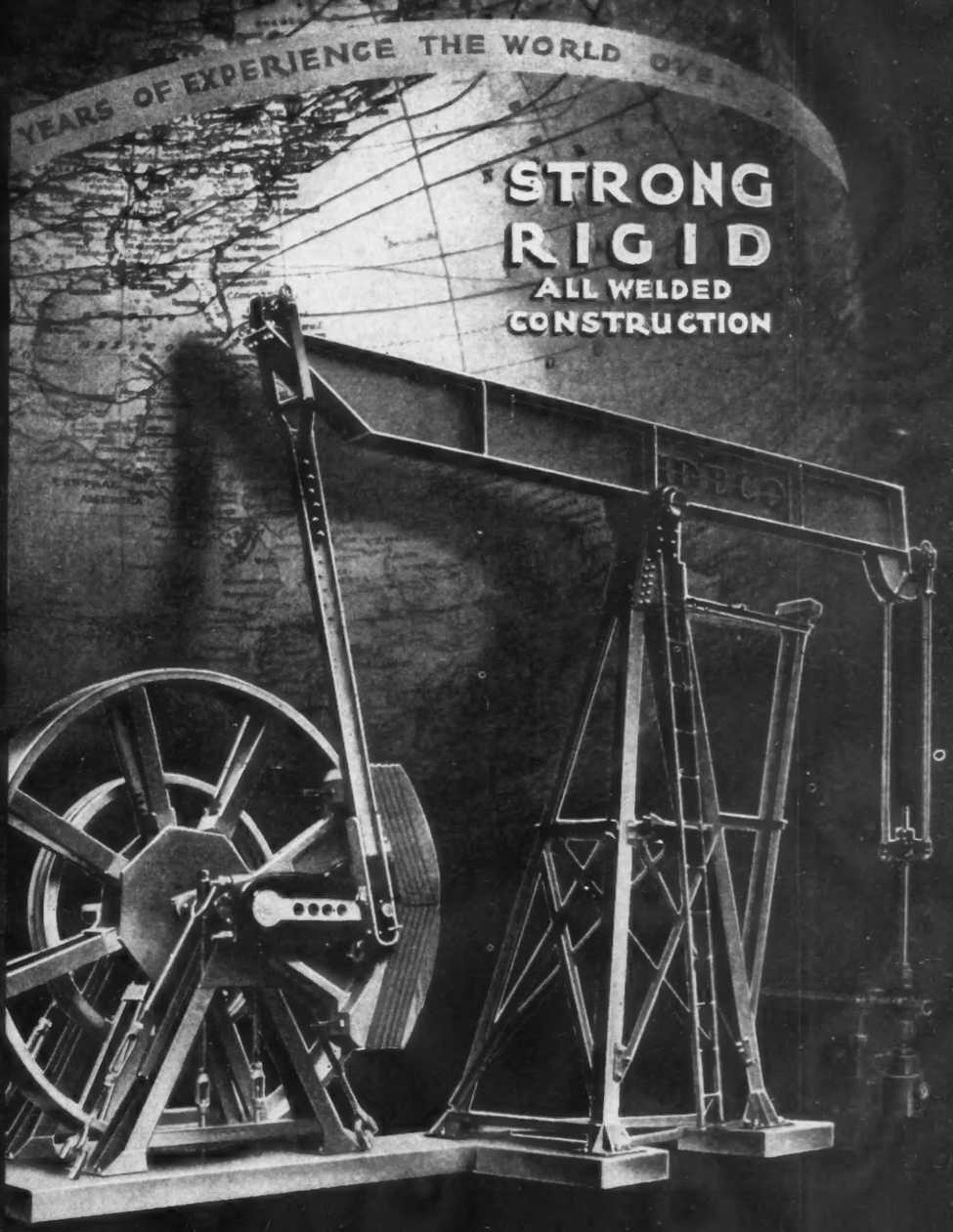

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Water Flood Drive

TO SHOESTRING LENSE TYPE OF FIELD

By FLOYD SWINDELL

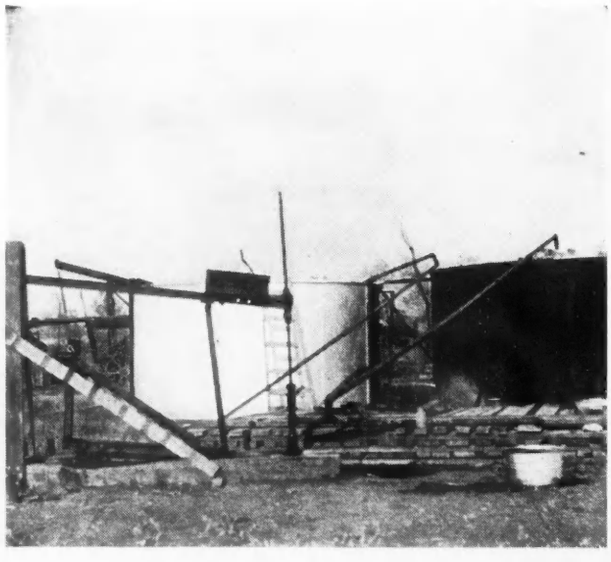
AIR OIL COMPANY, a corporation composed of F. D. Misener, pioneer independent oil operator of Tulsa, and of Crown Central Petroleum Company of Houston, recently has initiated a water-flood project approximately six miles southeast of Broken Arrow and one mile southwest of Oneta in western Wagoner County, Oklahoma.

This project, since it differs widely in several respects from the work being done in Nowata District, is of considerable interest. That it is directed toward increased recovery from a shoestring lense type of accumulation sets it apart from other projects now underway in the Mid-Continent. The Air Oil Company project involves two fundamental principles, namely, to flush out the remaining recoverable oil at a slow and uniform rate, and second, to obtain this additional oil at a minimum of expense.

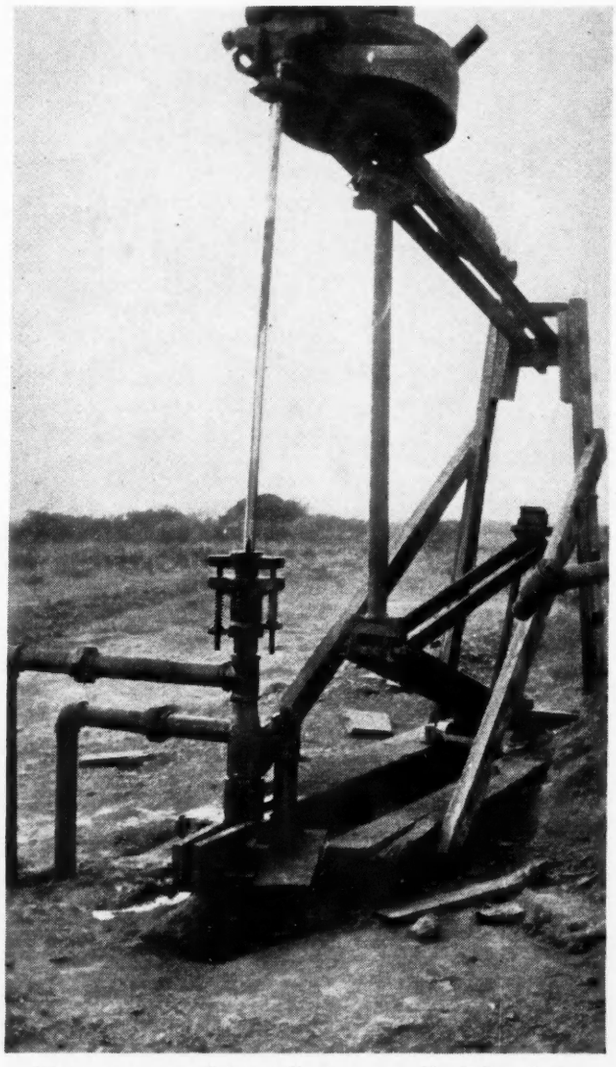
The plan being used is based on the lowest initial investment possible, very low operating costs and the willingness of the operator to accept any additional recovery at a slower rate. That it has a good possibility of returning a profit on the investment does not seem overly optimistic, even though it may not be based on highly scientific principles.

The first development in the area was in 1914 when two wells were completed. Further immediate activity was prevented by lack of a market outlet, and it was not until two years later that an active campaign was commenced. A total of 125 producing oil wells, five gas wells and 21 dry holes were drilled before the accumulation was defined, at which time approximately 700 acres were included within the boundaries of the pool.

Production was found in a sand member in the upper part of the Dutcher Series at an average approximate depth of 1225 feet below the surface. Average thickness of the sand is about 25 feet. The wells produced initially from 10 to 700 barrels of 39-gravity oil, and averaged between 100 and 200

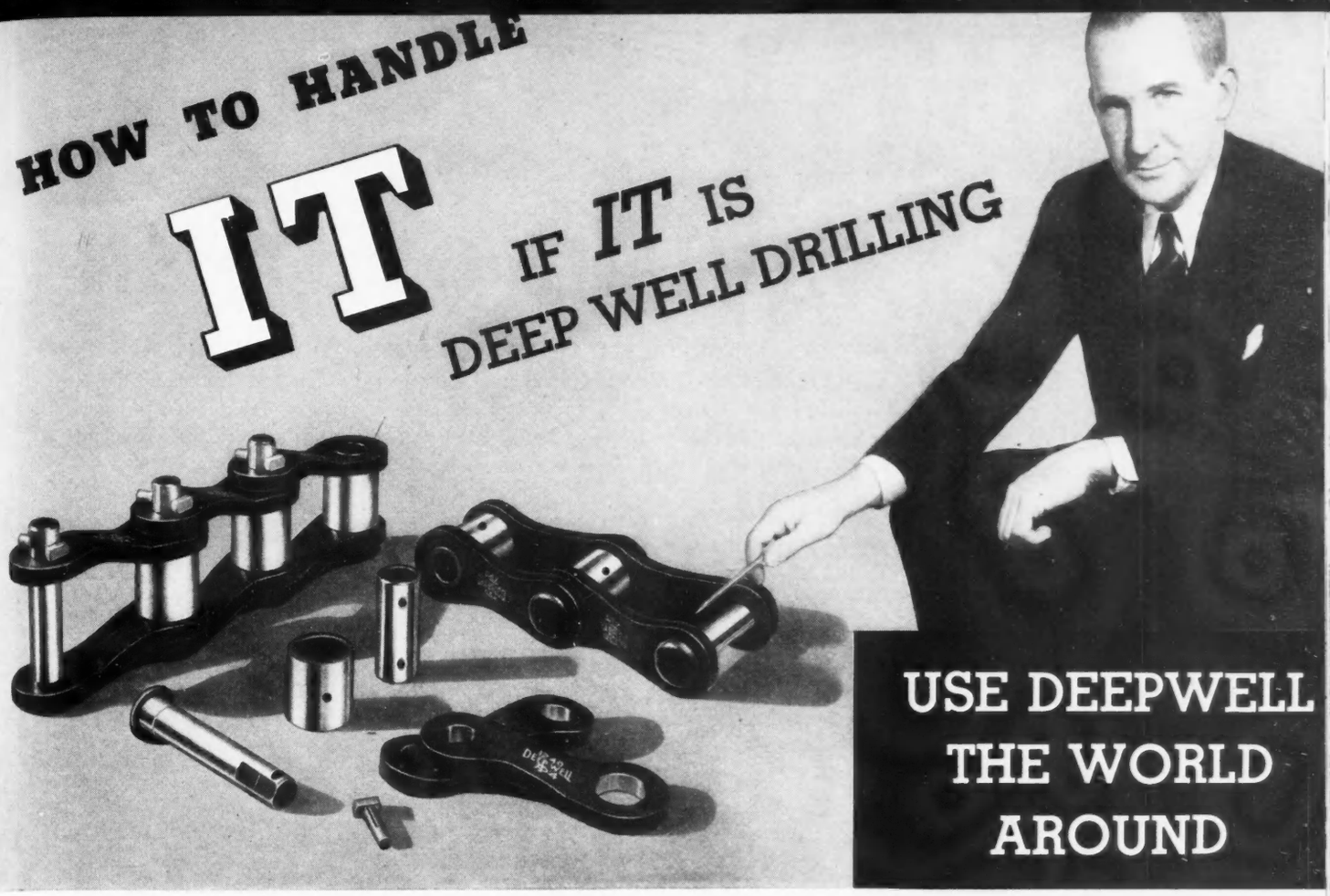


Picture No. 3—The reservoir tanks are located immediately adjacent to this well. Note the water return line which delivers to the input well by gravity alone.



Water output and input lines to a well. Subsurface arrangement is shown in Figure 1.

HOW TO HANDLE IT IF IT IS DEEP WELL DRILLING



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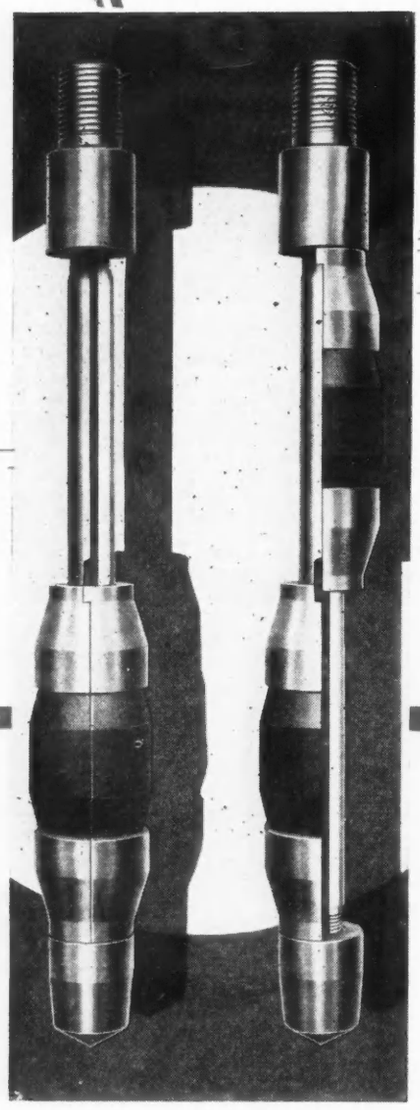

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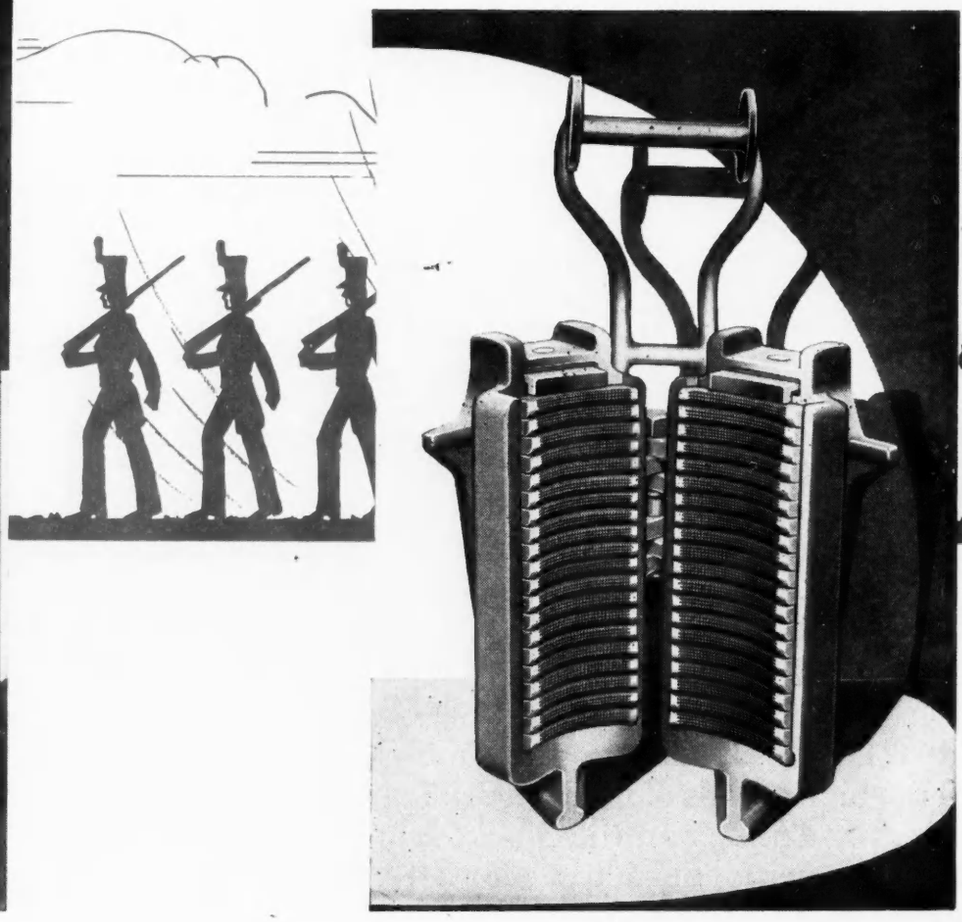

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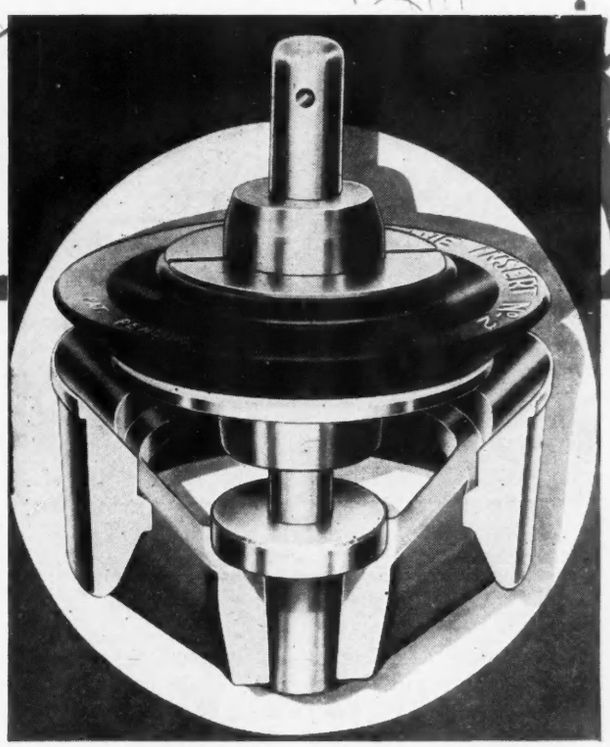

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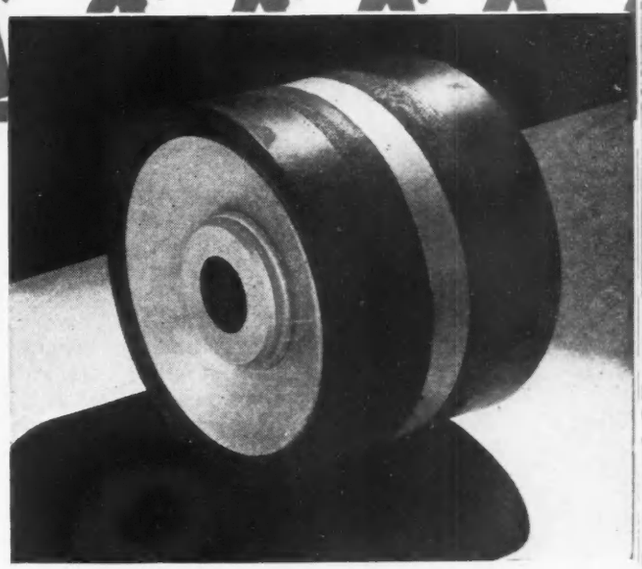

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barrels. As is typical of Dutcher sand production, the accumulation was very erratic, many of the larger wells being offset in several directions by much smaller wells and in a number of instances by dry holes. As will be noted from the accompanying map (Figure 1), the accumulation follows a shoestring type lense which resembles an inverted Y. At points where dry holes were completed immediately adjacent to producing wells, as in the southeast 40 acres of Section 29, the sand was found to grade abruptly into sandy shale or shale and lime of such density as to preclude the possibility of saturation. The pool was developed by a group of individuals and companies, who operated individually until 1926 when the properties were merged and Air Oil Company organized to carry on operations. Subsequently, Misener and Crown Central purchased all the stock of Air Oil Company.

The first attempt at artificial recovery methods was the application of vacuum, which met with indifferent success. After production had declined to a low figure and all but 26 of the producing wells had been abandoned, the operators started repressure work, using a mixture of oil and gas as the pressure medium. Production increases were negligible and the method was not considered a success, although it probably was not continued for a sufficient time to enable the operators to judge conclusively as to the possible merits. Early in 1936 a decision was made to flood the properties with water.

Source of Input Water

A water sand having an average thickness of about 100 feet and lying only 20 feet below the surface was selected as the source for input water. This sand outcrops in the bed and along the banks of the Arkansas River about three miles to the southwest of the pool, and apparently is the same sand from which the towns of Broken Arrow and Bixby have obtained their domestic water supplies for many years. Although the sand at its river bed outcrop is lower than at the point where it underlies the pool it should always be abundantly supplied with water through capillary movement. However, it should not be expected to exist under artesian conditions in the immediate vicinity of the pool. After several analyses chemists pronounced the water suitable for flood purposes without chemical treatment or filtration. The five water wells that were drilled are now yielding from 200 to 250 barrels each, using a short, slow-pumping stroke and ordinary cup-type plungers. By increasing the length and speed of stroke it is believed that water production from the five wells could be more than doubled. For about two months water was lifted by air, but the method was considered too expensive and ordinary pumping methods were resorted to. During the air-lift experiment, one well averaged slightly more than 600 barrels of water per day.

One of the economies which impresses visitors to the project is the manner in which water output wells also are utilized as water input wells, saving a string of surface pipe and about 125 feet of hole. Figure 2 illustrates the manner in which this economy is obtained. In these wells 12-inch hole is drilled to the top of the water sand, the hole reduced to eight-inches and a joint of 10-inch surface pipe cemented. The hole is drilled with an eight-inch bit to a point 15 or 20 feet above the top of the oil

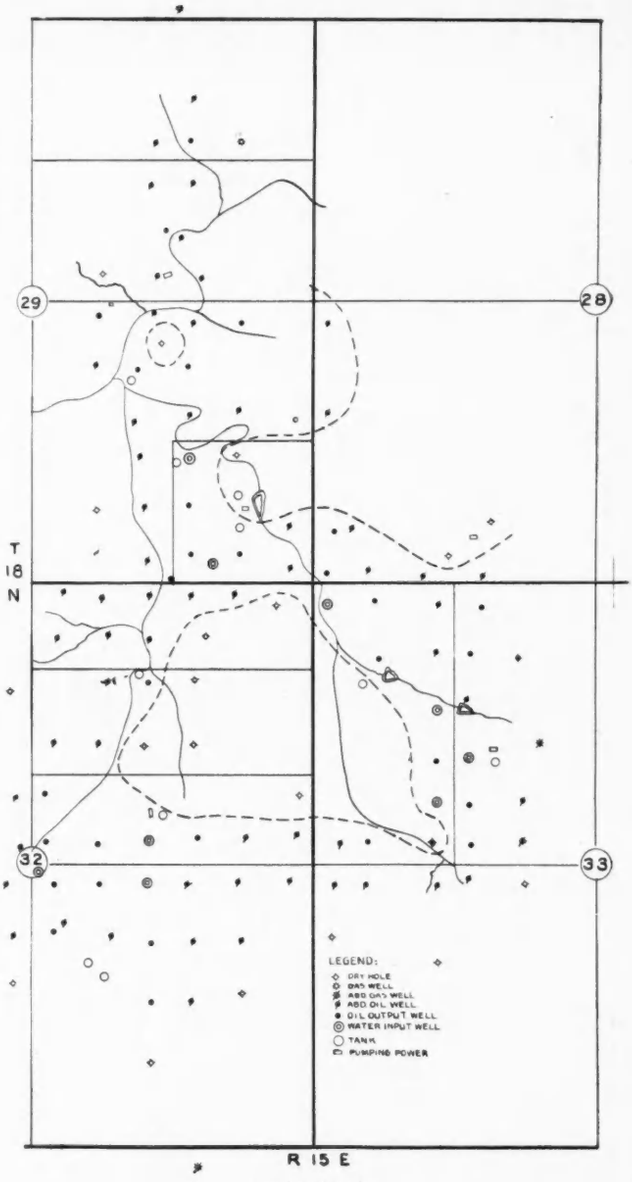

FIGURE 2

The same wells are used for water output and water input, and are hooked up as shown here

sand, carrying a string of 6⅝-inch casing which is set on formation at that point. The hole is reduced to six inches and the entire sand section penetrated. No water is found either beneath the sand or at the edges of the pool, the driving force being gas. After the 6⅝-inch string has been set without cement a string of two-inch tubing with a bottom-hole packer is run, so that the tubing stands on bottom and the packer sets immediately above the sand. The 6⅝-inch string is then pulled and a small amount of cement placed on top of the packer to insure a water shut-off. The bottom joint of tubing is perforated to release the input water to the oil sand. A string of three-inch tubing is run to a point about 10 feet above the base of the water sand, hung on clamps and a string of sucker rods and a regular cup-type plunger inserted. Pumping motion is imparted by the use of an ordinary jack operated through a rod line from the nearby pumping power or jack plant. Water is pumped from the five wells

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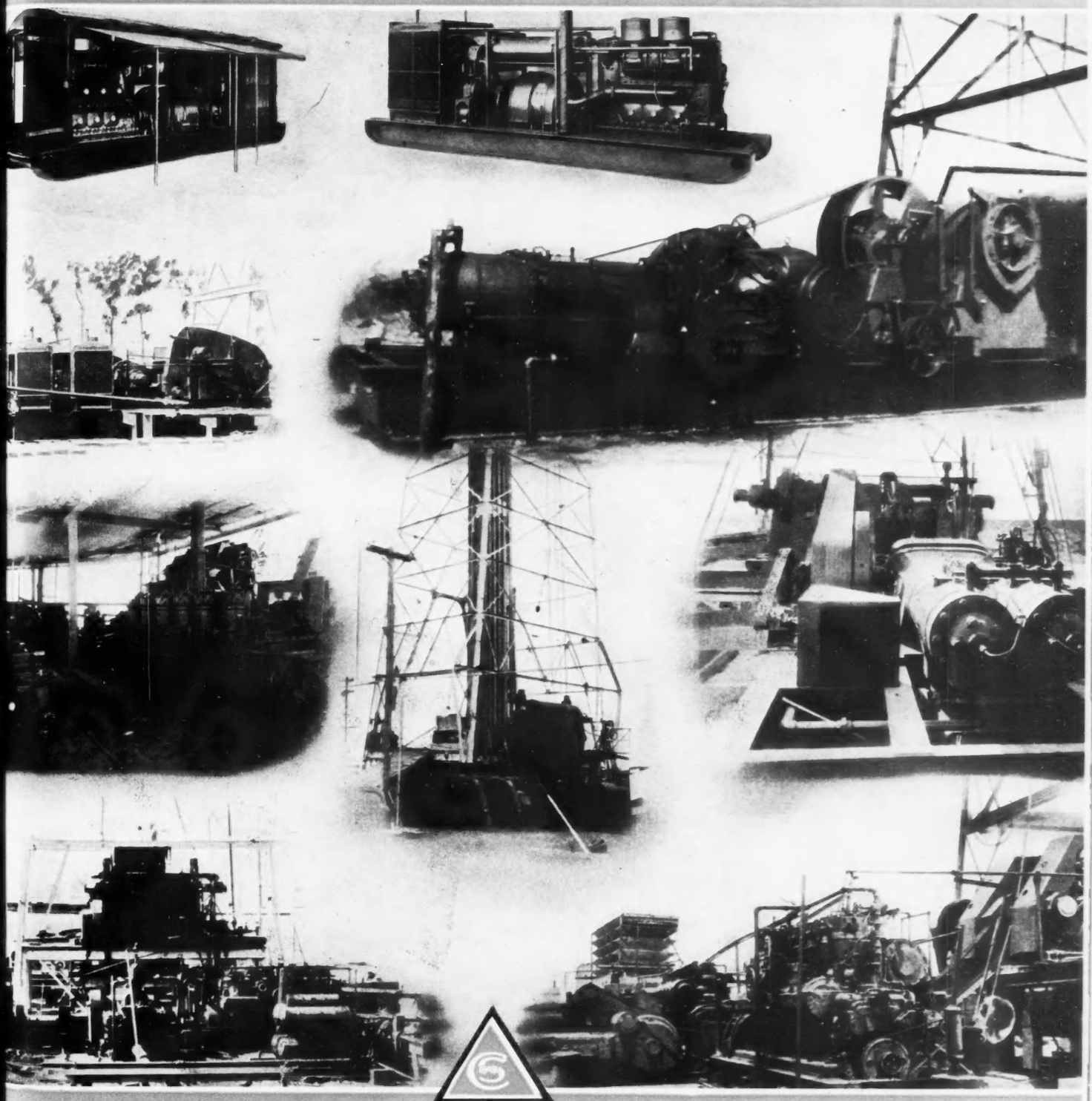

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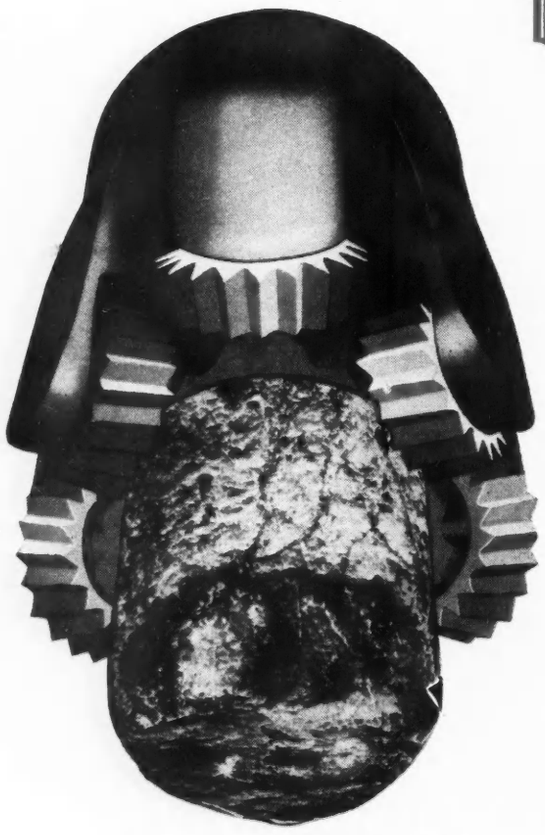

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to steel reservoir tanks, from which it is conducted through a manifold back to the input wells.

At this time water is entering the sand through nine input wells, spaced somewhat erratically over the structure. Two of the input wells were drilled at the time the flood was started and the other seven were abandoned air-gas injection wells which were not reconditioned to receive the water. Of the total of nine input wells, seven are delivering water to the sand at hydrostatic pressure or about 500 pounds per square inch at the sand face. The other two input wells require approximately 200 pounds pump pressure to deliver the desired amount of water to the sand. One of the old gas injection wells is taking 200 barrels of water per day and another 150 barrels of water per day at hydrostatic pressure although neither was cleaned out in preparation for the flooding operations. The first water was introduced into the sand early in July of this year, at which time the 26 producing oil wells were yielding only 20 barrels of oil per day or less than one barrel per day each. No. increases have yet been observed and none are expected until another 60 to 90 days have elapsed.

Methods of Handling Water

As heretofore stated, water is pumped directly from the wells to 100-barrel steel reservoir tanks. These tanks are provided with a manifold system that makes it possible to shut off water from any one or all input wells. No water meters have been used to obtain exact readings on the amount of water injected into each well. Periodically all wells are shut off at the manifold with the exception of one which is to be gauged for rate of input. One well at a time is permitted to take water at its normal operating pressure. The reservoir tank is gauged before and after the two-hour test and the amount of water calculated. Working with averages so obtained the operators are able to calculate within practical limits of error the amount of water that any one well has taken between test periods.

Four pumping powers or jack plants are required to handle the 26 oil producing wells and the five water output wells. Here again the visitor is impressed with the economy of operation. Four of the water output wells are handled on one plant and one on another. A geared pumping unit is driven by a 25-horsepower gas engine through a straight belt drive. At one pumping power a total of four water wells, three oil wells and two line pumps are being handled by the one engine. The line pumps which are designed to build up pressures as high as 800 pounds per square inch, are hooked to the geared unit in the same manner followed in hooking on the oil producing wells and the water wells. One of the pumps is set inside the power house and the other in directly the opposite direction and on the outside of the building. In this manner the two pumps are balanced on the geared unit so that the engine is not overloaded at any particular point in the revolution of the unit. These pumps furnish the pressure necessary to carry water to the outlying wells which take water at hydrostatic pressure and to the two wells which require about 200 pounds in addition to the hydrostatic pressure. An advantage to having one of the pumps inside the building will be in the protection from low temperature during the winter months. If, upon gauging the wells as previously explained, it is found that any one well is not taking the amount of water considered necessary to the satisfactory progress of the flood, the pressure on that well is slightly increased. Later when production increases have been obtained and some definite ideas of the direction and rate of progress of the flood have been obtained, the operator may, if necessary, use some dependable markers in the water, additional input wells may be drilled and it may be found necessary to drill additional oil output wells to obtain the maximum recovery. However, in considering the plan which has been followed to date consideration should be given the fact that several natural barriers apparently exist in the pool. It is presumed that the areas enclosed within broken lines on the accompanying map are impervious and therefore will act as natural barriers away from which the flood water should work its way toward the nearby producing wells. Eliminating these areas from the possible productive territory and assuming that no water will find its way into these apparently impervious spots, the reader will note that it would be difficult to lay out a five-spot plan which would fill the requirements.

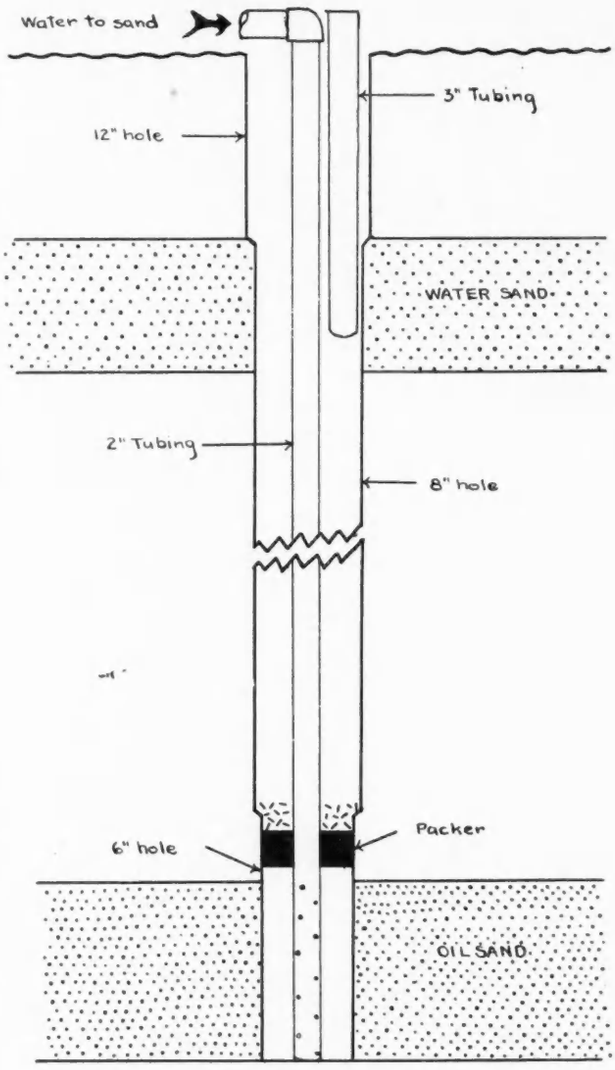

FIGURE 1

Map showing lenticular sand conditions in Wagoner County, Oklahoma, field being water flooded

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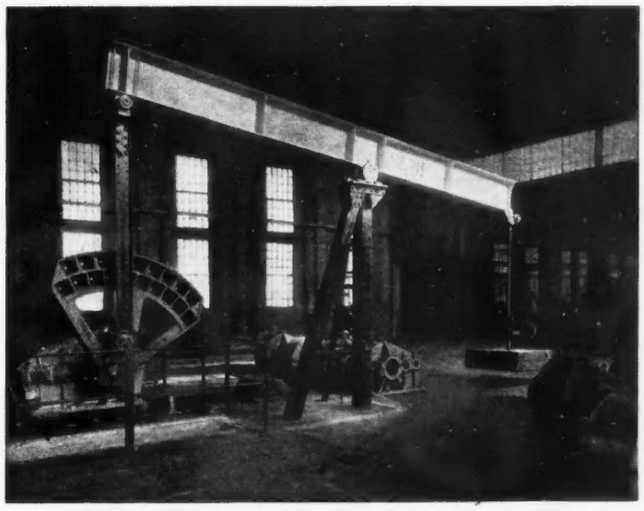

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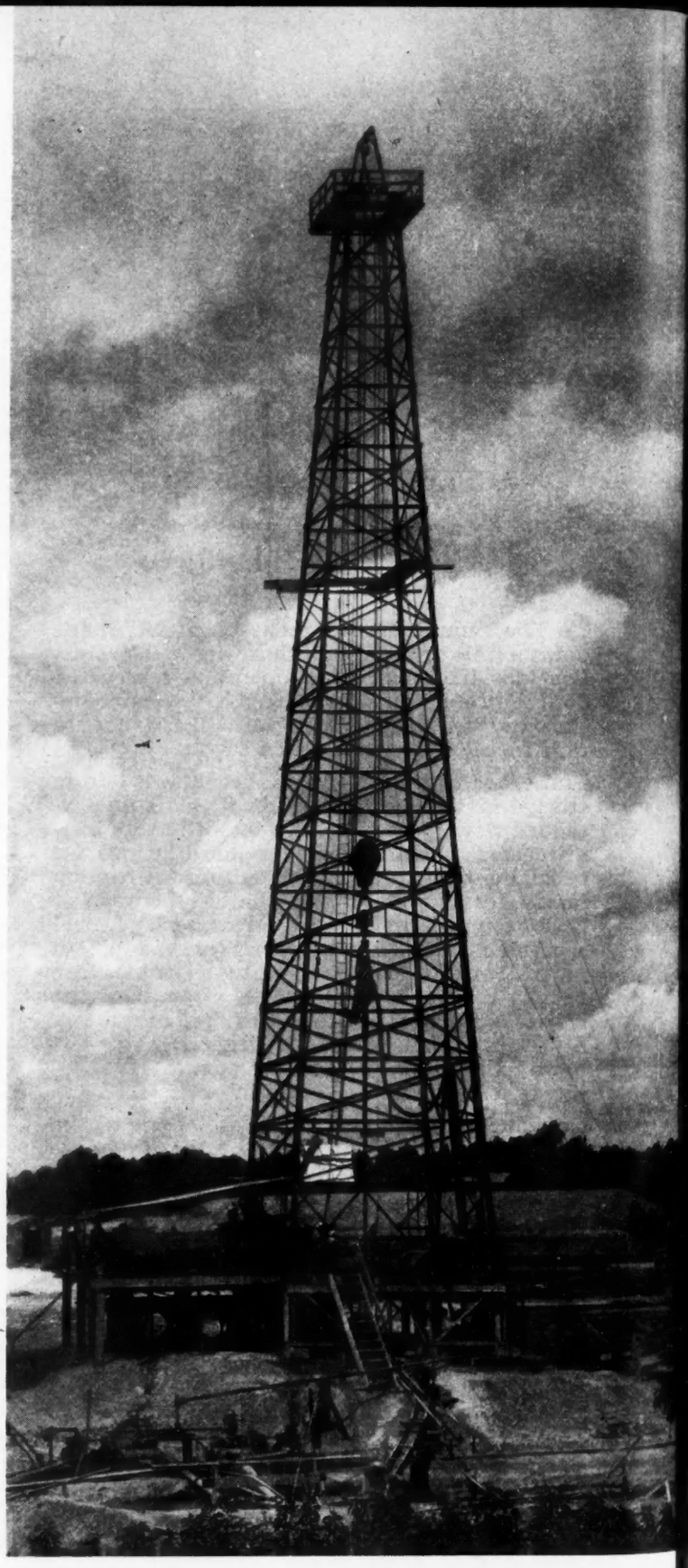

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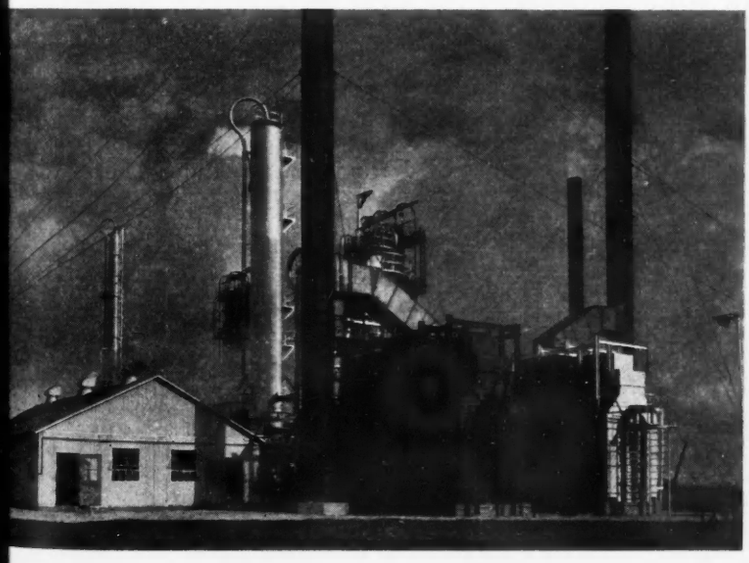

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Gas-Lift Operations

ON THE CARY LEASE AT OKLAHOMA CITY ARE BASIS FOR AN INTERESTING STUDY

By S. F. SHAW, Consulting Engineer,
Westgate Oil Company and Natural Gas
Development Corporation

THE Cary lease is one of the principal leases in the Oklahoma City field. None of the wells have been produced by any other method than by natural flow and gas-lift, or by combination gas lift-pumping method. It is an illustration of the large quantity of oil that such wells can produce after several years of productive life, where conditions are suitable. Costs of operations are low, despite the years of life, and the great depth from which the oil is extracted. An interesting feature is the large production that can be made at these great depths with such low bottom-hole pressures. Another interesting feature is that bottom-hole pressures have remained practically unchanged for more than six months, even though producing at a fair rate, and with all offset wells producing at the same rate, and with spacing at less than five acres per well in the general vicinity.

THE Cary lease in the Oklahoma City field, is owned by Westgate Oil Company and Natural Gas Development Corporation. The first well on this lease was completed in April, 1931, when Cary 1 was brought in for 51,040 barrels per 24 hours, based on 4-hour initial test. At this time there were very few wells in this area, and it is supposed that the reservoir pressure was not much below the initial pressure of the field, which is estimated to have been about 2600 pounds per square inch.

Two more wells were drilled on this lease within the four months following completion of Cary 1, and this lease of 72 acres remained in this status for more than two years before additional wells were drilled. In order that the sequence of development on this lease may be followed, general data as to well completions are given in Table 1.

The first three wells came in on natural flow. Cary 2 has continued producing by that means up to the present time. Cary 3 was placed on gas-lift in May, 1934, and Cary 1 was on gas-lift in November, 1934. After completion, Cary 4 made one initial flow naturally, after which all production was obtained by gas-lift, and has continued on this method up to the present time, except for a short period when the gas-lift electric centrifugal pump combination method was employed. Wells Nos. 5, 6, 7, 8 and 9, flowed naturally for a time, after which all except Cary 7 were placed on gas-lift. The allowable production has been obtained on natural flow from wells Nos. 2 and 7 up to now, and occasionally No. 8 will produce on natural flow even at this late period, when the offset well on the north is shut in.

Gas-Lift Plant

The gas-lift plant on the Cary lease consists of ten 230-horsepower compressors, eleven 165-horsepower compressors, and three 190-horsepower compressors, aggregating 4700 horsepower with combined capacity of about 25,000 cubic feet per day when compressing from intake of 10 pounds to 400 pounds discharge pressure. The plant has been built in sections as the gas-lift demands increased from time to time. The cost of the plant was about $285,000. To date, the quantity of gas delivered from the plant has been 7,145,000,000 cubic feet, compressed at average operating expense of 0.81 cents per M. Cubic feet on atmospheric pressure base. Depreciation will not be known until the operations are discontinued. However, assuming a salvage value of 40 percent and a total production of 7,000,000 barrels of oil on gas-lift, the cost for depreciation would be 2½ cents per barrel, and on basis of compressing 25,000,000,000 cubic

TABLE 1

Completion Data of Wells on the Cary Lease, Oklahoma City

Well	Date Completed	Top Wilcox	T.D. Feet	Feet Sand	Diam. Casing	Initial Bbl. 24 Hours	POTENTIALS		
							March, 1935	March, 1936	Sept., 1936
1	April 21— 1931	6261	6410	149	6⅝	51,040	2,564	407	644
2	May 27, 1931	6338	6535	197	6⅝	45,522	6,734	525	736
3	August 17, 1931	6322	6530	208	9	96,540	7,840	5,016	5,417
4	November 13, 1933	6352	6533	181	9	13,500	7,702	3,513	4,394
5	April 27, 1934	6280	6426	146	9	1,392	15,738	3,899	4,198
6	July 28, 1934	6328	6480	152	7	3,474	1,861	690	2,161
7	September 5, 1935	6355	6513	156	7	1,332	.....	360	1,097
8	September 4, 1935	6301	6464	163	9⅝	5,327	.....	5,023	4,829
9	August 1, 1935	6272	6401	129	9⅝	6,204	.....	5,039	5,481
10	May 18, 1936	6256	6382	116	9⅝	1,208	.....	1,208	3,807
11	November 21, 1935	6335	6506	171	9⅝	3,452	.....	4,750	5,048
12	December 12, 1935	6360	6523	163	9⅝	2,130	.....	4,809	5,115
14	February 24, 1936	6387	6539	152	9⅝	2,051	.....	3,865	5,220
	Averages	....	....	160	...	233,172	42,439	39,104	48,147

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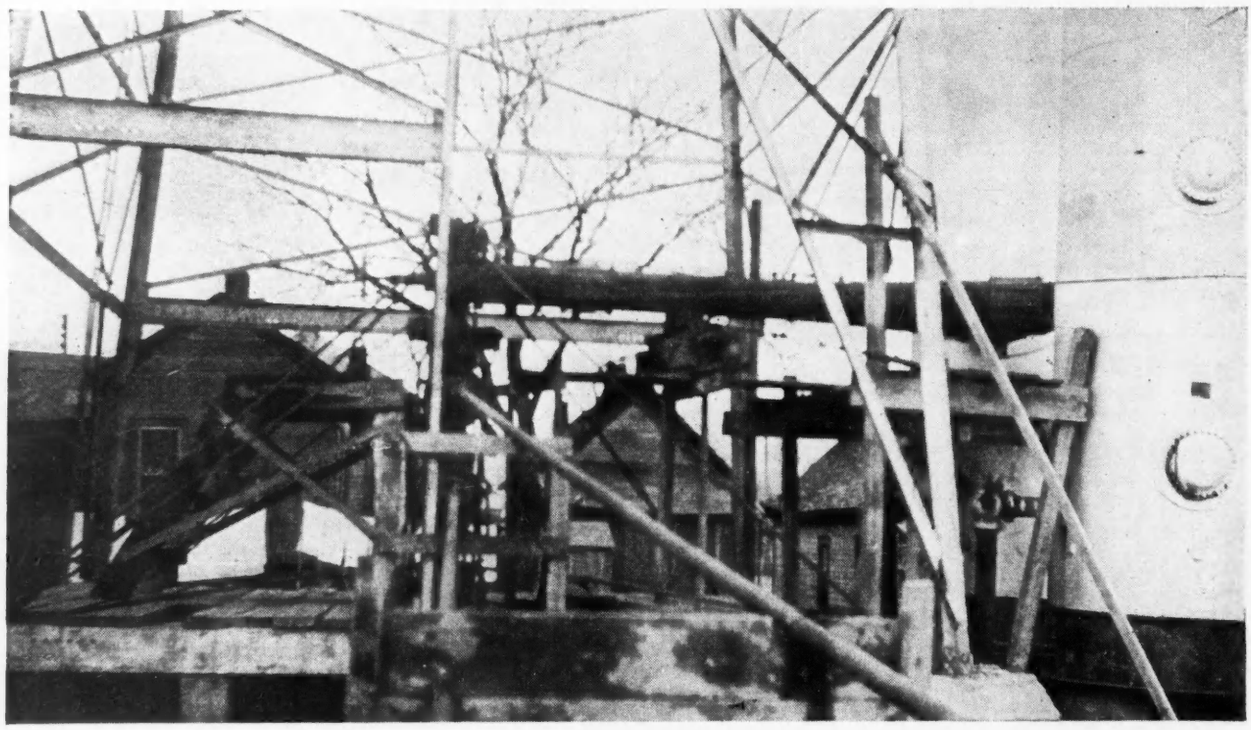

Westgate Oil Company's Cary 3 on natural flow. This well had initial of 96,000 barrels per day and continued on natural flow until production had declined to 8,000 barrels per day. The largest well in the Oklahoma City field.

feet of gas, the depreciation would be 1.14 cents per M. cubic feet.

The first well placed on gas-lift was Cary 4, at which time the reservoir pressure was in the neighborhood of 600 pounds and the consumption of input gas was about 600 cubic feet per barrel, and output gas was about 1100 cubic feet per barrel, thus making for a formation gas-oil ratio of about 500 cubic feet per barrel.

Cary 3 was placed on gas-lift in May, 1934, when production was in the neighborhood of 8000 barrels per day. At this time, the consumption of input gas was approximately 600 cubic feet per barrel and the consumption of output gas was about 1000 cubic feet per barrel, thus yielding a gas-oil ratio of about 400 cubic feet per barrel. Owing to surging conditions in the well when producing this quantity of oil, exact ratios were not available, nor was it possible to obtain satisfactory bottom-hole flowing pressures at this early date.

As time progressed, however, it became possible to obtain very satisfactory data as to input and output ratios, bottom-hole reservoir pressures, and bottom-hole flowing pressures, which has provided a good opportunity to make comparisons between the use of the different sizes of casing employed on this lease.

The fact that some of the wells on this lease have continued to flow naturally, which wells are situated adjacent to wells that had to be produced on gas-lift, has also provided some interesting data as to comparative gas-oil ratios on natural flow and on gas-lift flow, also on the production that can be produced through small casings as compared with larger sizes of casing.

Natural Flow

It is usually conceded that the least expensive method for lifting oil is that of natural flow, but it has been shown by wells on the Cary lease when the reservoir pressure has declined to the point where there is insufficient gas dissolved in the oil to lift it to the surface, that formation gas-oil ratios are higher, and in many cases are very much higher when producing on natural flow, than when employing gas-lift. This assumes that natural flow has declined to the point where gas-lift can be employed satisfactorily. In gas-cap areas, it is not possible, as a rule, to use gas-lift or any other method effectively until the pressure and quantity of gas have been much reduced from that previously prevailing.

It also develops that flowing the oil at maximum capacity, is accompanied by lower gas-oil ratios, than when flowing at restricted rates. This is not peculiar to the Cary lease wells, since it has been observed in various parts of the Wilcox sand of the Oklahoma City field, as was brought out by various engineers when conferring recently with the State Conservation officer in connection with consideration of possible methods for reducing waste of gas in the Mansion section of this field.

In a general way we may say that under conditions

TABLE 2

Approximate Quantity of Gas Required to Lift a Barrel of Oil at Maximum Capacity on Straight Gas-Lift in the Oklahoma City Field

Barrels per Day at Maximum Capacity	Cubic Feet Output Gas Required per Barrel
10,000	1,100
9,000	1,150
8,000	1,250
7,000	1,400
6,000	1,550
5,000	1,750
2,500	2,750
1,000	5,000
800	5,800
600	6,400
400	7,200
200	13,500
100	25,000

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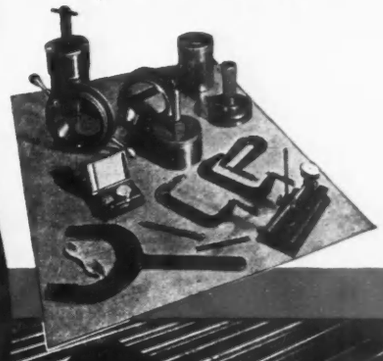
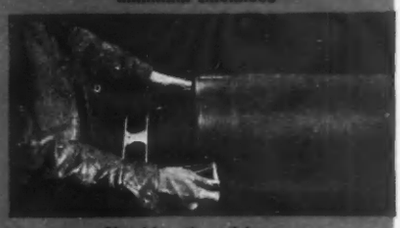
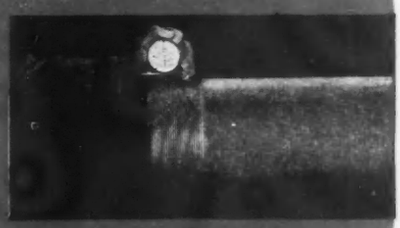


Inspecting inside surface of pipe

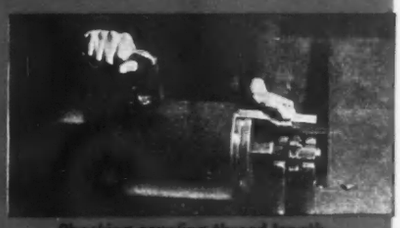
Testing pipe walls for maximum and minimum thickness



Checking thread taper



Checking thread pitch



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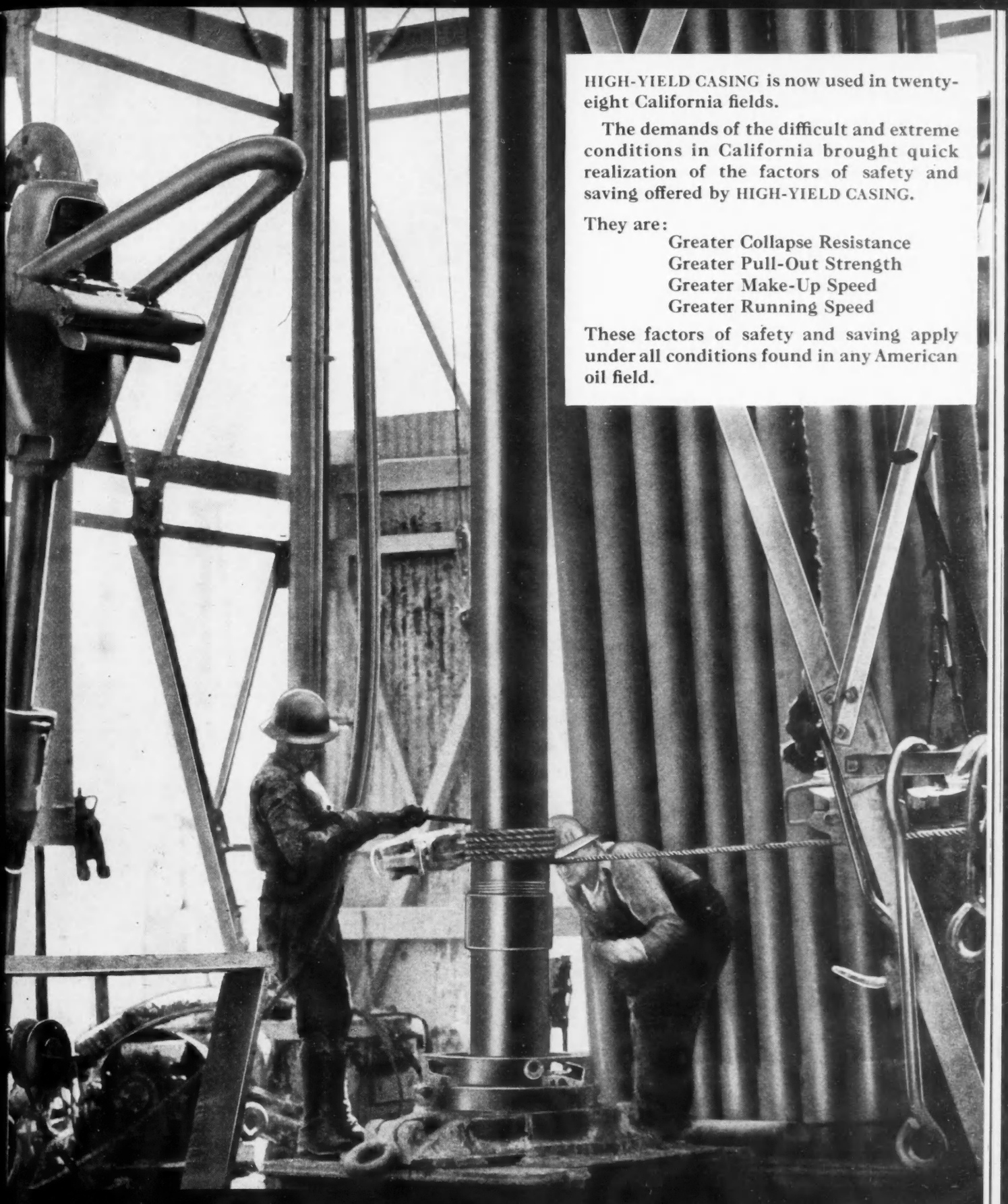

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attendant on producing at maximum capacity, the output gas ratios that will be required to lift a barrel of oil in the Oklahoma City field are as given in Table 2.

A few tests were obtained on Cary 2 on natural flow which serve to illustrate various phases of production in a well completed with 6⅝-inch O.D. casing. These figures are given in Table 3. In the same table there are also given some data on Cary 7 on natural flow through a casing of 7-inch diameter.

In tests Nos. 2 and 3 of Table 3 there may be noted a comparison between rate of flow restricted to 62 barrels per day caused by deposition of paraffin, in which case the gas-oil ratio was 24,650 cubic feet per barrel, as compared with production of 1092 barrels per day with gas-oil ratio of 4680 cubic feet per barrel after the paraffin had been scraped from the walls of the casing.

In tests 8 and 9, there will be noted a similar comparison in a well completed with 7-inch casing in which a rate of 139 barrels per day resulted in a gas-oil ratio of 12,350 cubic feet per barrel as compared with a production of 968 barrels per day with a gas-oil ratio of 3680 cubic feet per barrel after the paraffin had been scraped from the walls of the casing.

An interesting comparison is noted in Table 4 between gas-oil ratios obtained on natural flow and on gas-lift in the same well.

It will be noted in Table 4 that the gas-oil ratio increased from 2130 cubic feet per barrel when on gas lift, to 2990 cubic feet per barrel when on natural flow with the input gas shut off from the well.

The above figures for output ratios may differ in the several tests from those given in Table 2, owing to the fact that the wells were not being produced at maximum capacity. In such a case, when produced at less than maximum capacity, the output factor required per barrel will be gradually reduced until the point of maximum efficiency is reached, after which any reduction in the flow will be at gradually increasing rate of output gas per barrel.

TABLE 3

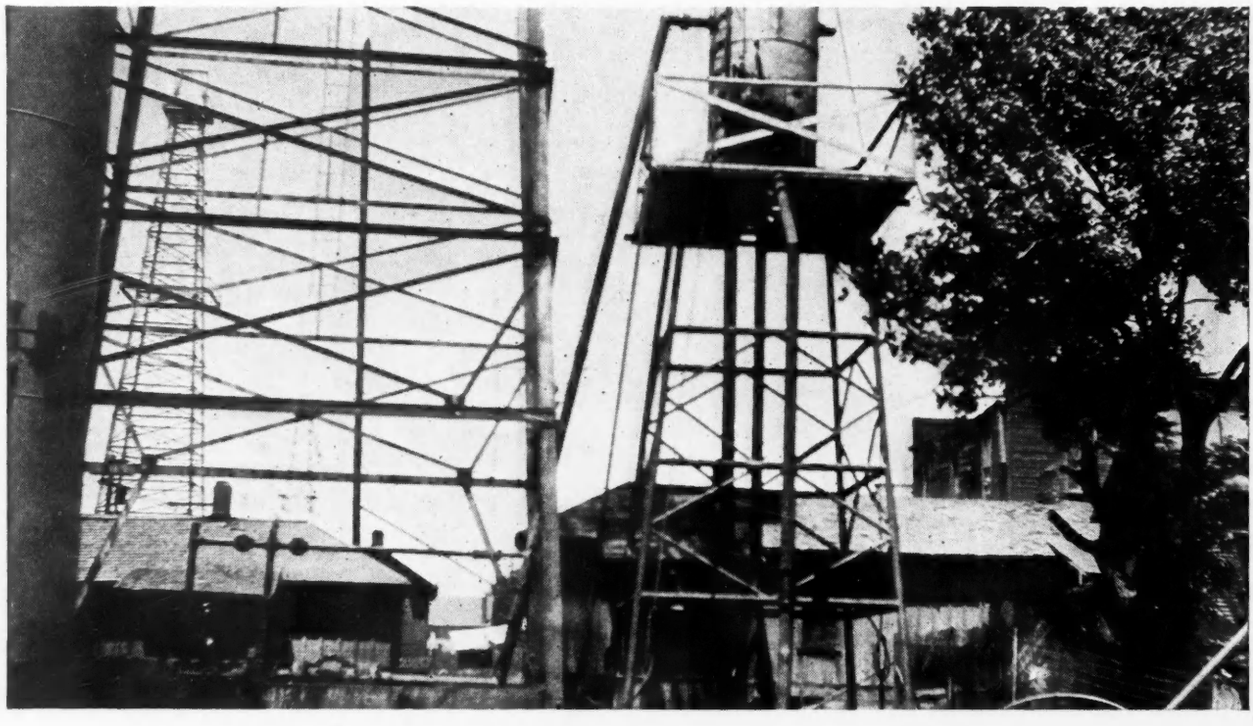
Gas-Oil Ratios in Wells Flowing Naturally

Test No.	Well No.	Diameter Casing	Barrels per Day	Gas-Oil Ratio	Back Pressure
1	2	6⅝	756	4,680	19½ lb
2	2	6⅝	62	24,650	4½ lb
3	2	6⅝	1,092	4,680	8 lb
4	7	7	1,100	2,530	10 lb
5	7	7	205	5,870	.....
6	7	7	173	7,100	.....
7	7	7	764	3,290	.....
8	7	7	139	12,350	.....
9	7	7	968	3,680	.....

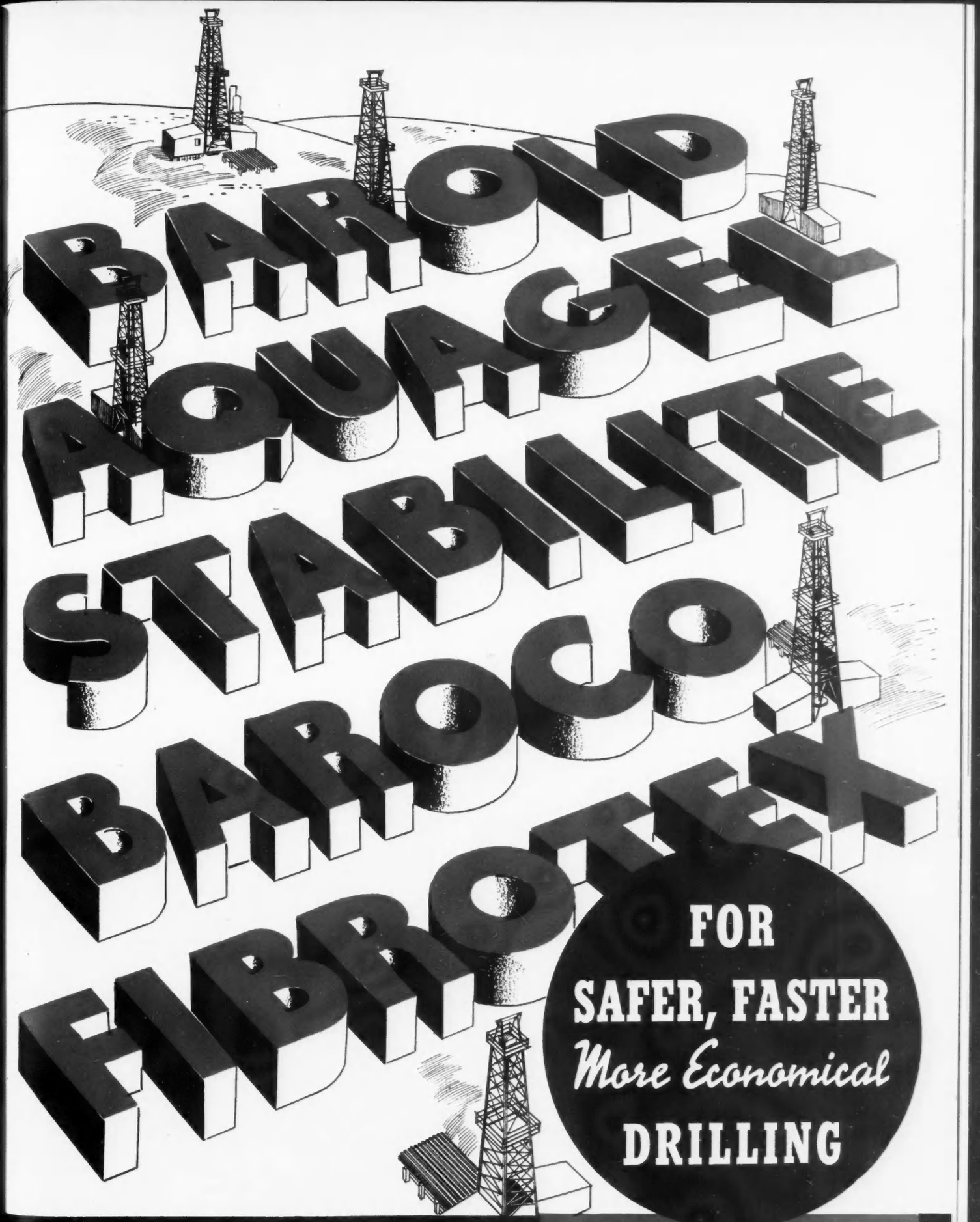
TABLE 4

Gas-Oil Ratios Obtained in Cary 8 When Flowed Naturally and When on Gas-Lift

How Produced	GAS FACTORS PER BARREL			Barrels per Day	Back Pressure, Lbs. per Sq. In.
	Input	Output	G.O. Ratio		
Gas-Lift.....	790	2920	2130	2157	6
Natural Flow.....	....	2990	2990	1189	6½



Cary 3 was on gas lift from 8,000 barrels per day until it had declined to 1,000 barrels per day. Separator elevated to reduce back pressure.



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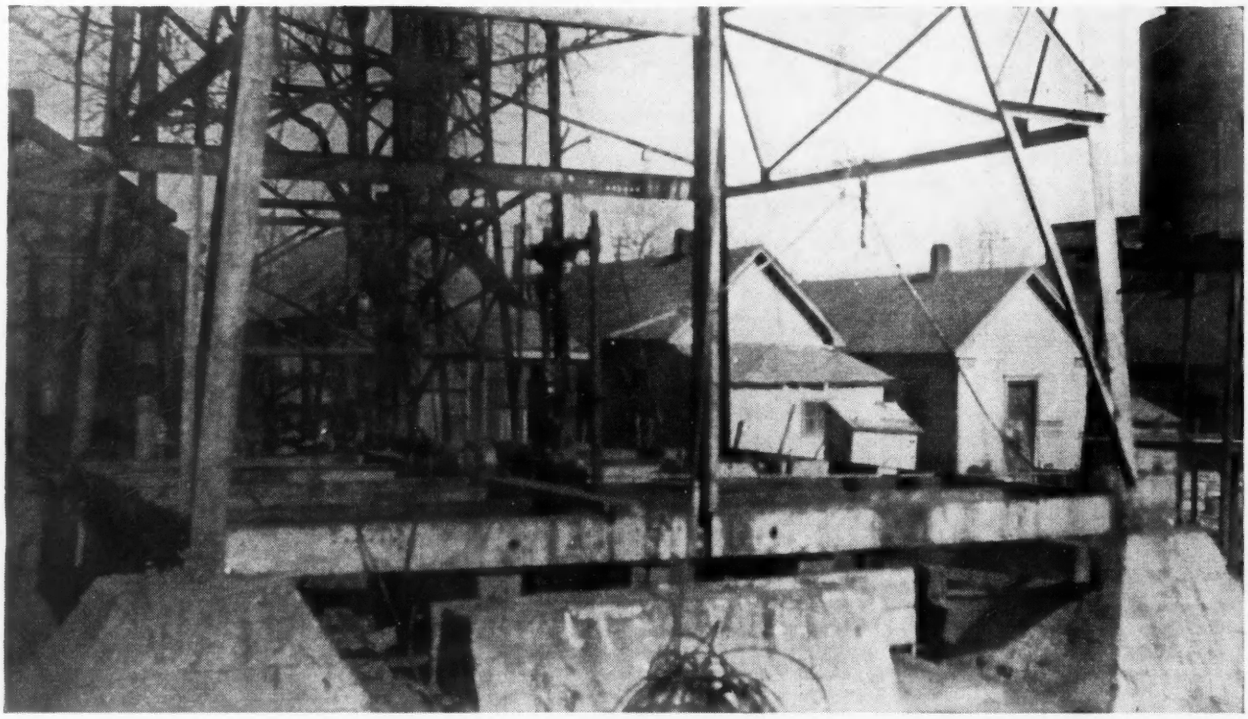

Cary 3, placed on gas lift-centrifugal pump combination method, made 5,000 barrels per day after it had declined to 1,000 barrels per day on straight gas lift. Solvent storage tank on right.

Wells on the Cary lease have been produced on gas-lift through casing of 6⅝ inches, 7 inches, 9 inches and 9⅝ inches. Two-inch upset tubing is employed in wells with 6⅝-inch casing; 2½-inch upset tubing is employed in casings of 7 inches; upset tubing of 2½ inches and 3 inches has been employed in casings of 9 inches; and tubing of 2½ inches, 3 inches and 4 inches has been employed in casings of 9⅝ inches. The size of tubing will depend upon the prevailing conditions. Two-inch tubing would be more satisfactory than any other size in that it occupies less space in the casing than a larger size, thereby allowing a greater area through which the mixture of oil and gas may pass. However, when the reservoir pressure has declined to a low point, a large quantity of gas is required to lift the oil through the 6500 feet of producing string, therefore, high line pressures are required when introducing large quantities of gas through a small tubing. When considering efficient operating conditions in the compressor plant on the Cary lease, it has worked out more satisfactory to employ 2-inch tubing in casings of 6⅝-inch; 2½-inch tubing in wells with 7-inch casing; and 3-inch tubing in wells completed with 9-inch and 9⅝-inch casing.

It became necessary to place Well No. 1 on intermittant flow at an early date, owing to the low capacity on straight gas-lift when producing through the casing of 6⅝-inch. A test on straight gas-lift when producing at 155 barrels per day was made on this well with input gas amounting to 6450 cubic feet per barrel, output gas at 8920 cubic feet per barrel, and gas-oil ratio of 2470 cubic feet per barrel. This well is on the east edge of the lease where a gas-cap tended to form in the earlier life of the well, and where gas-oil ratios have always been high. Six months previous to the test noted on gas-lift, this well produced on test at the rate of 744 barrels per day on natural flow, with gas-oil ratio of 12,100 cubic feet per barrel.

Cary 6 was completed with 7-inch casing. In November, 1934, a test on this well when producing at the rate of 2805 barrels per day showed an input factor of 1552 cubic feet per barrel, output factor of 2318 cubic feet and gas-oil ratio of 766 cubic feet per barrel. Three months later, when producing at the rate of 1512 barrels per day, the input factor had increased to 2060 cubic feet per barrel, output factor was 2980 cubic feet per barrel, and gas-oil ratio was 920 cubic feet per barrel.

In general, it may be said that the use of 6⅝-inch and 7-inch casing in the Oklahoma City field has been unsatisfactory for gas-lifting operations, in that the production is so greatly reduced and the consumption of gas per barrel is so much increased over that prevailing when using the larger sizes of casing.

The quantity of oil that can be produced through 9-inch and 9⅝-inch casing for a given bottom-hole flowing pressure is so much greater, and the consumption of input gas so much lower, than when using smaller sizes of casing, that there seems little reason for drilling wells of this depth and completing with casing smaller than 8⅝-inch casing, where large daily production can be lifted. This point was brought out very clearly in the East Earlsboro field at Seminole, during the latter part of 1929, when Shell Petroleum Corporation and Carter Oil Company made comparisons of wells completed with 7-inch and with 8⅝-inch casing, and established high potentials in wells in that area by using the larger casing. It was found in the Seminole pools that the oil could be lifted with lower input gas factors per barrel when

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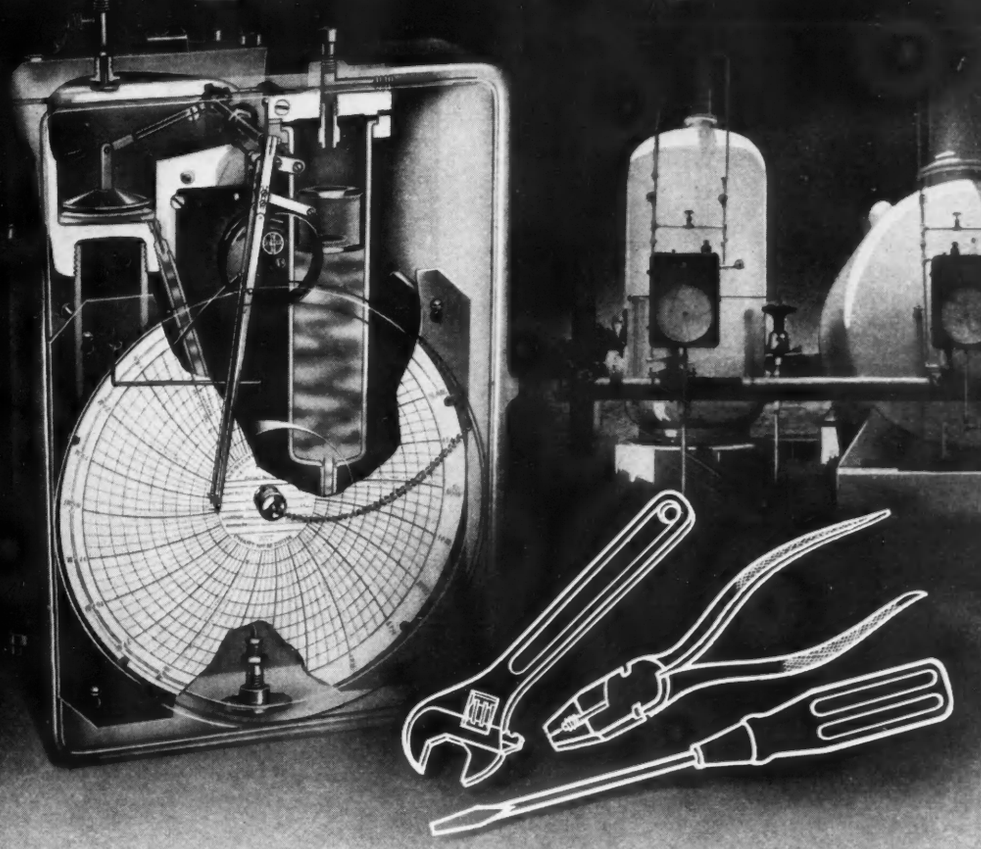

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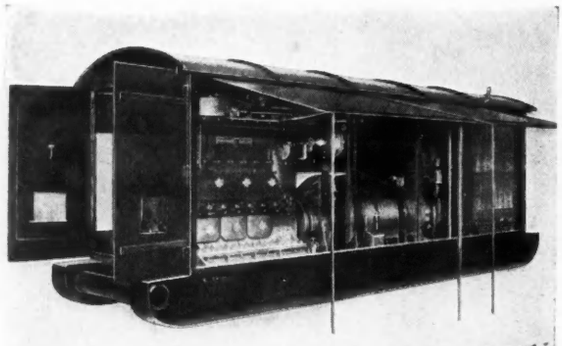

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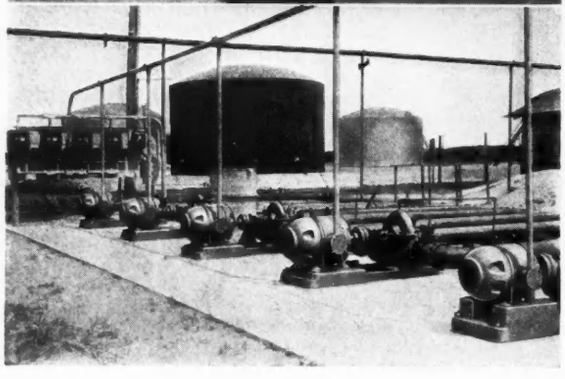

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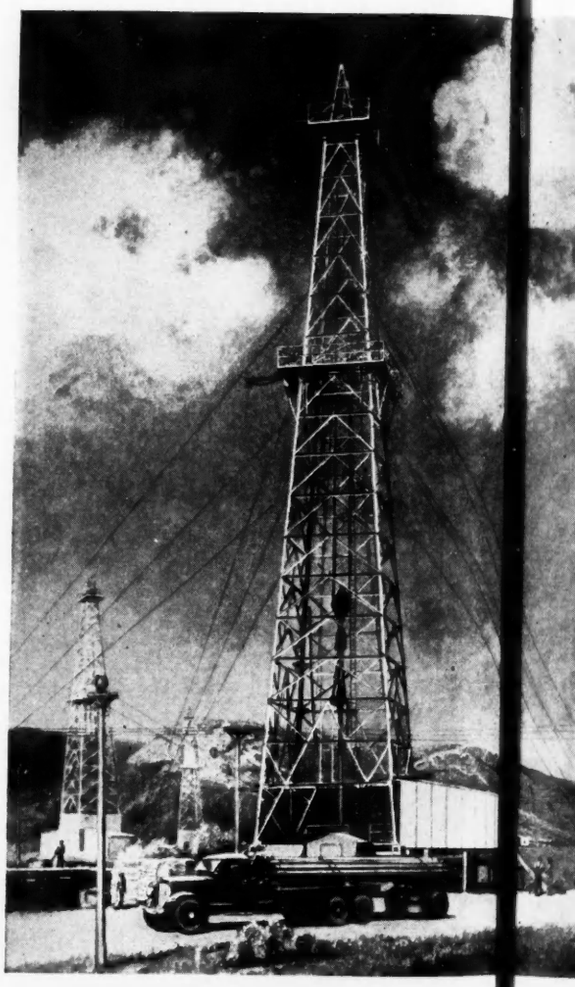

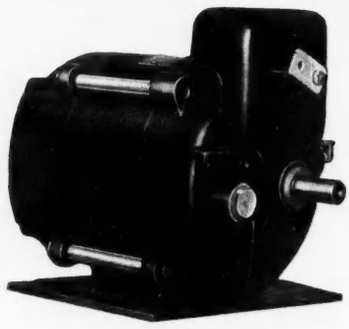

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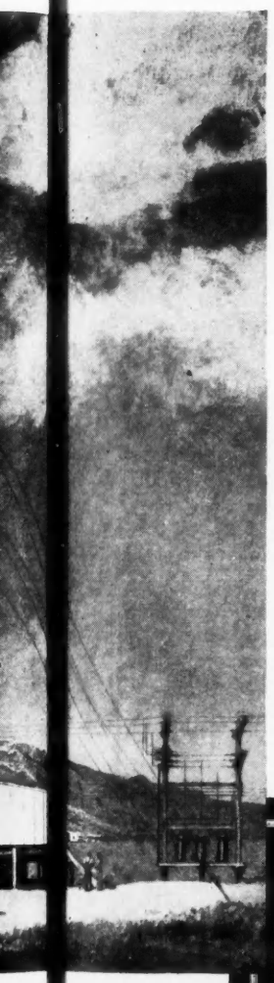

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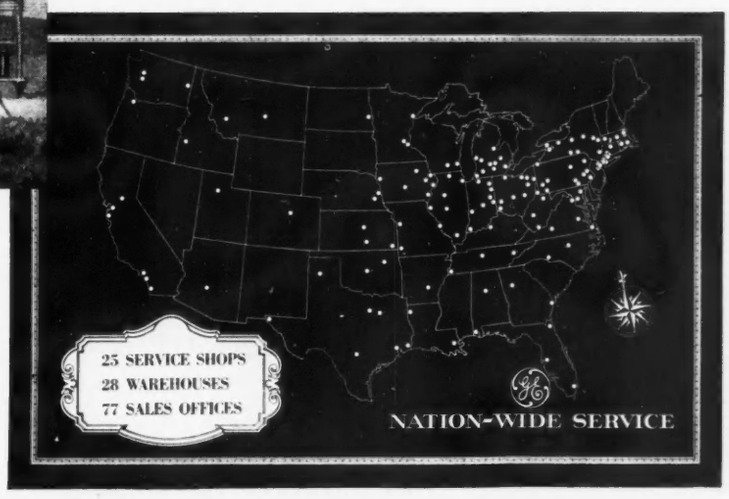

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producing large quantities through the large string of casing.

Attention has been called by R. W. Brauchli[1] to the greater initial production of wells completed with large casing sizes in the early life of the Wilcox area in the Oklahoma City field.

Some examples of producing through 9-inch and 9⅝-inch casing are given in Table 5. It will be noted in this table that larger rates of flow are accompanied by lower gas input factors.

Tests have been made in large numbers of bottom-hole flowing pressures when producing through the various sizes of casing, and it has been found that the capacity of a casing of 9⅝-inch is approximately 50 percent greater for a given bottom-hole flowing pressure than when producing through a 9-inch casing.

TABLE 5

Gas-Factors Obtained When Producing Through 9-Inch and 9⅝-Inch Casing at Maximum Rates of Production in the Oklahoma City Field

Test No.	Well No.	Casing Diam.	Gas Factors per Barrel in Cu. Ft.			Barrels per Day	Lbs. Back Pressure
			Input	Output	G.O. Ratio		
1	3	9″	600	?	?	8,448	53
2	3	9″	807	1,088	281	6,727	41
3	3	9″	1,082	1,430	348	5,040	55
4	3	9″	1,367	2,000	633	3,875	55
5	3	9″	4,560	4,950	390	1,021	10
6	4	9″	628	944	316	8,448	35
7	4	9″	3,370	3,740	370	912	20
8	4	9″	3,970	4,420	450	1,004	9
9	5	9″	3,560	3,780	220	1,008	4
10	5	9″	3,750	4,000	250	815	3
11	9	9⅝″	2,310	2,470	160	1,993	9¾
12	10	9⅝″	4,000	4,230	230	1,144	8½
13	11	9⅝″	2,910	2,980	70	1,814	10½
14	12	9⅝″	2,640	2,720	80	2,001	7
15	14	9⅝″	2,390	2,500	110	2,165	8½

Influence of Back-Pressures When Lifting Oil by Gas Lift

Many tests have been made to ascertain the effect of different back pressures when producing through different sizes of casing. Some of these tests are given in Table 6. It will be noted that as the back pressure is increased when injecting a given quantity of input gas, the production of oil is reduced, and the consumption of input gas per barrel is increased.

In the tests given in Table 6, output gas readings could not be obtained when the back pressures were low, owing to the size of the orifice plate being too small for measuring the gas at low pressures.

TABLE 6

Effect of Back Pressures on Consumption of Input Gas and on Production

Test	Well	Lbs. Back Pressure	Barrels Oil per Day	Cu. Ft. Input Gas/Day	Gas Factors per Barrel		
					Input	Output	G.O. Ratio
1	3	4	1,787	3,420,000	1,830	.....	.....
2	3	15	1,598	3,420,000	2,140	.....	.....
3	3	42	948	3,422,000	3,620	4,870	1,250
4	3	5	1,824	4,756,000	2,530	.....	.....
5	3	17	1,642	4,510,000	2,740	.....	.....
6	3	40	683	4,620,000	6,970	8,200	1,230
7	3	6	1,679	5,300,000	3,140	.....	.....
8	3	15	1,545	5,300,000	3,390	.....	.....
9	3	25	1,385	5,520,000	3,980	.....	.....
10	3	37	1,074	5,370,000	5,000	5,580	580

Producing Oil by Gas-Lift at Low Bottom-Hole Flowing Pressures

In the early life of the Oklahoma City field, observations on the action of continuous gas-lift when employing small casings appear to have led many operators to assume that continuous gas-lift is not economical in operation, and that its capacity is too much restricted when the reservoir pressure has declined to 300 pounds. In order to make observations as to this condition, arrangements were worked out so that tests could be made on a well on the Cary lease which has a large casing, some of the results of which are noted in Table 7. It will be observed that the production on straight gas-lift, with bottom-hole flowing pressure of 61 pounds, permits a daily production of about 550 barrels per day to be lifted with input gas consumption of 5740 cubic feet per barrel. Average compression operating costs at the Cary lease plant covering a period of two years have been 0.81 cents per M. cubic feet and with input gas at 5740 cubic feet per barrel the gas-lift costs, amounting to 4½ cents per barrel, are low, and the quantity of oil produced is very satisfactory. If additional calculations that have been made can be depended upon, it would seem that straight gas-lift can be depended upon to lift about 100 barrels per day when the bottom-hole flowing pressure has declined to about 20 pounds. Calculations can be depended upon as being fairly accurate as shown by the fact that the tests in Table 7 were within 5 percent of estimates for pressures and for gas consumption that had been made previous to beginning these tests.

Use of Gas Lift-Centrifugal Pump Combination Method

It was observed early in the gas-lift operations on the Cary lease that a very large production could be obtained through 9-inch casing without reducing the flowing pressure more than 10 to 20 pounds below that of the reservoir pressure. This was the reason for completing wells Nos. 8, 9, 10, 11, 12, and 14 with casing of 9⅝ inches O.D., and when these wells were completed it was again observed that the flowing pressures could be lowered only about 10 pounds below the reservoir pressure when making a production of about 2000 barrels per day. The writer was much puzzled as to selection of a method that could be employed to lower the bottom-hole pressure, and, therefore, induce a greater quantity of oil to enter the well. The introduction of the gas lift-electric submerged

TABLE 7

Quantity of Oil That Can Be Lifted and Consumption of Gas When Operating at Low Bottom-Hole Pressures in the Oklahoma City Field

Test	Bottom-Hole Flowing Pressure—Lbs.	Barrels Oil per Day	GAS FACTORS		
			Input	Output	G.O. Ratio
1	61	547	5,740	6,960	920
2	72	745	4,550	5,130	780
3	87	1,132	3,920	4,650	730
4	102½	1,370	3,450	4,040	590
5	128	1,952	2,660	3,130	470

[1]R. W. Brauchli, Size of Oil Strings and Initial Output. Oil & Gas Journal, September 3, 1931.

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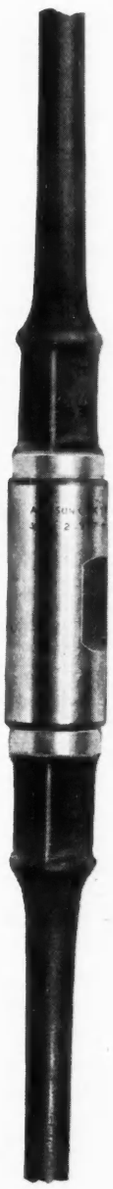

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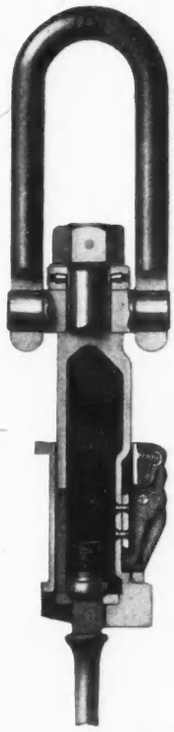

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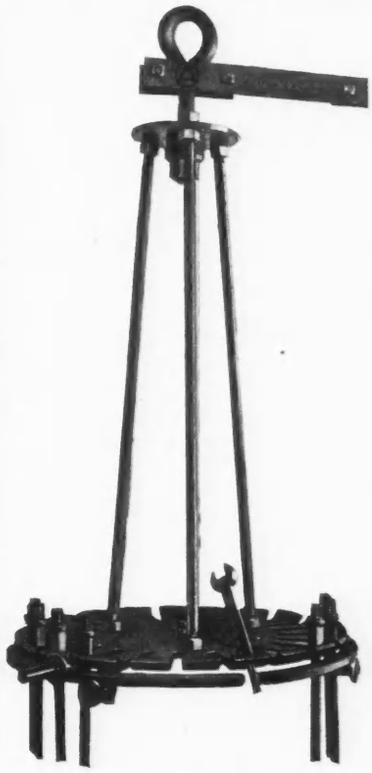

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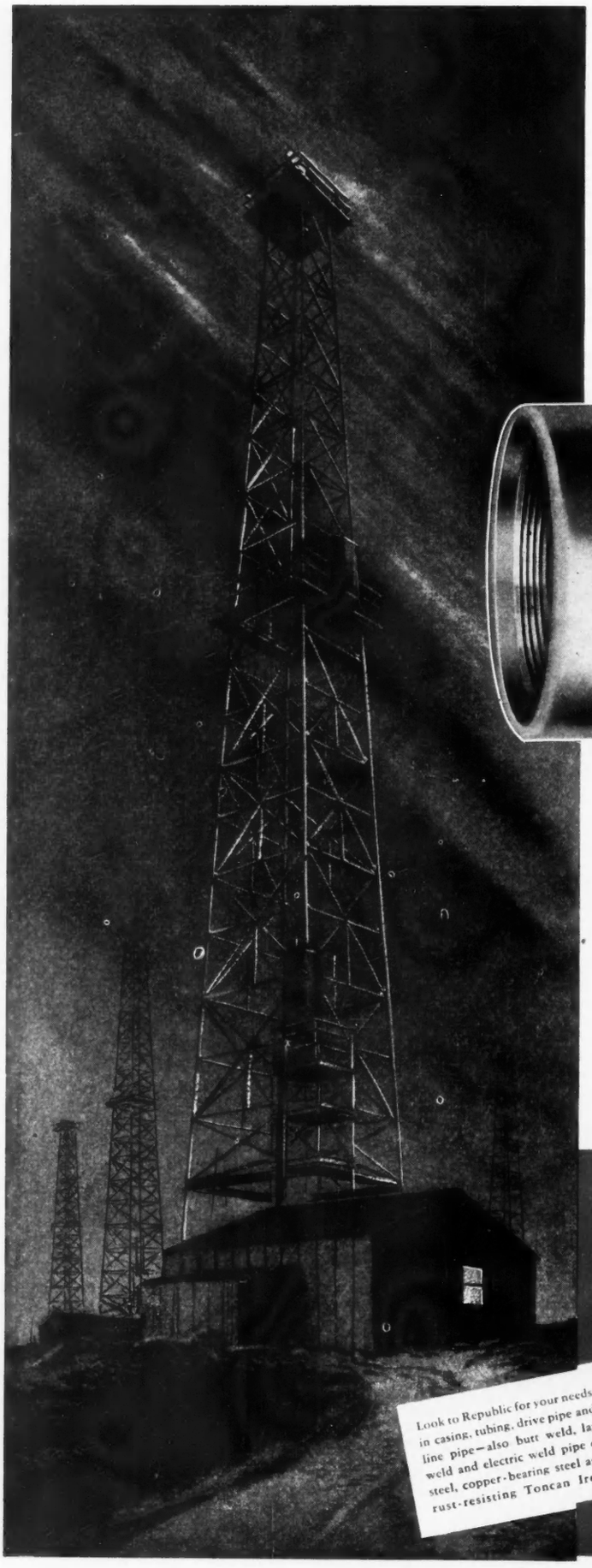

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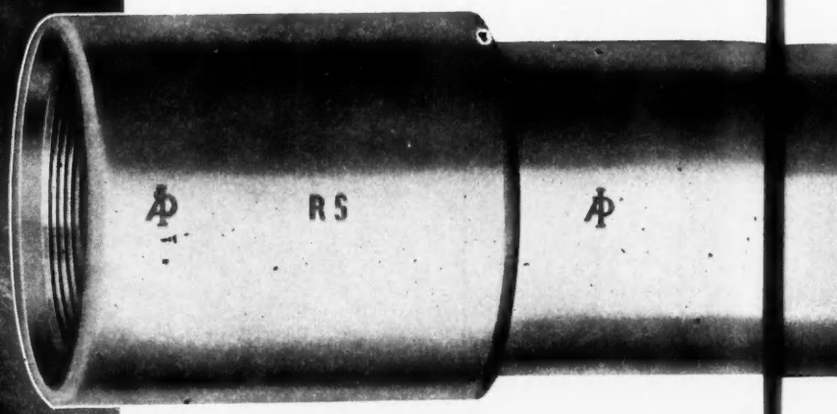

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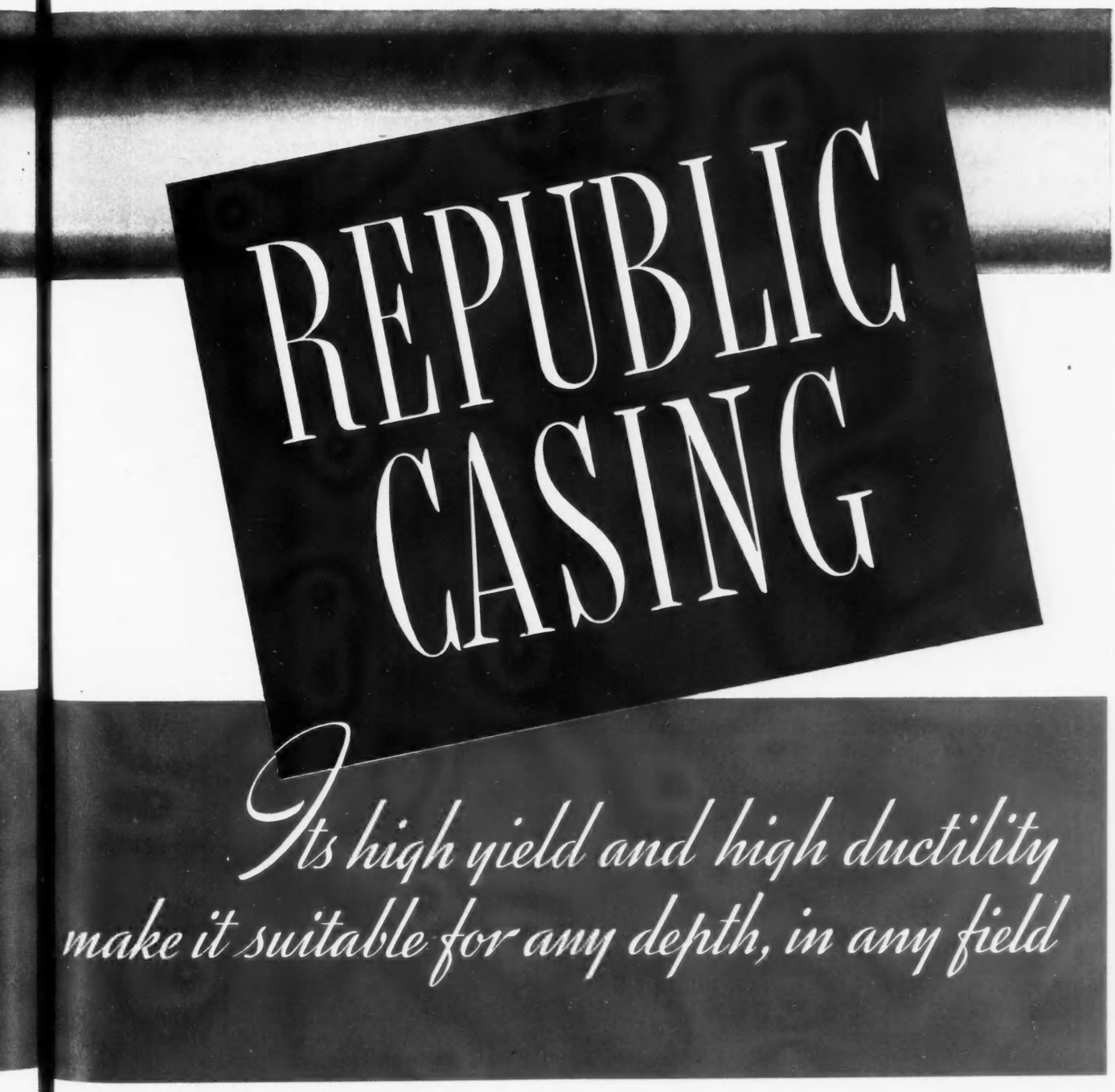

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Paraffin scraped from Cary 8 before systematic use of paraffin solvent.

centrifugal pump combination method has to some extent solved this difficulty, but has not yet reached the maximum possibilities of the wells, owing to the difficulties encountered through the movement of loose sand when handling large quantities of oil.

Difficulties have been encountered in greater measure when using the centrifugal pump in small casings than in the larger sizes of casing, consequently the pump has been employed on the Cary lease only in wells completed with the larger sizes of casing. It has been found when the reservoir pressure has declined to about 135 pounds, that the centrifugal pump combination method is capable of lifting about 2½ times as much oil as when producing on straight gas-lift. In other words, in wells that can produce 2000 barrels per day on straight gas-lift on the Cary lease through 9⅝-inch casing with reservoir pressure of 135 pounds, about 5000 barrels of oil per day can be produced by means of the combination method. A sufficient number of observations have not yet been made that would permit stating that the factor of 2½ would apply to all pressures; probably it would not so apply.

When wells on the Cary lease are producing on straight gas-lift at the rate of 2000 barrels per day, the consumption of input gas is about 2500 cubic feet per barrel. When using the bottom-hole centrifugal pump combination method and lifting at the rate of about 5000 barrels per day, the input factor is about 1250 cubic feet per barrel. At Cary 9, the consumption of electric current is about 0.6 kilowatt hours per barrel, when lifting at this rate, and at cost of 3 cents per kilowatt hour, including the charge for demand current, the cost per barrel for electric power is about 1.8 cents per barrel. So far as lifting costs are concerned, there is no advantage on the Cary lease in using the centrifugal pump since the cost for power just about balances the operating cost for the increased input gas ratio when on straight gas-lift, owing to the low cost for compressing gas on this lease. However, it is of advantage to establish high potentials, and when the allowable exceeds 40 percent of the potential, the combination method permits the operator to produce more oil than would be the case with straight gas-lift.

In using the gas lift-centrifugal pump combination method it should be remembered that the principles of gas-lift apply for all operations above the packer just as if there were no pump in the well. The pump merely serves as a means of setting up an artificially increased submergence, under which condition the gas-lift can perform to better advantage.

Paraffin Accumulations

After the reservoir pressures on the Cary lease declined to about 200 pounds, for a time it seemed as if the deposition of paraffin on the walls of the casing, operations. It became necessary to overcome this difficulty, or to adopt some method other than straight gas-lift operation. Consequently, several months were spent in making tests with various solvents, and in experimenting with different methods of applying the solvents, in an effort to overcome this trouble, and at the present time the method has become as successful in the solvent treatment applications as any other phase of gas-lift activity, and has developed into a routine operation. It must be said, however, that these treatments cannot be neglected, else trouble makes itself felt in a very short time. Wells on the Cary lease have shown no tendency toward reduced production for the past six months or more, and during this period it has not been necessary to pull any tubing in order that casings might be scraped free of paraffin accumulations.

Production of the Cary Lease

Production of oil from the Cary lease has been as follows:

Year	Wells	Barrels
1931-1933	3	1,345,176
1934	6	1,088,771
1935	12	2,611,852
1936 (6 mos.)	13	1,053,288
Total		6,099,087

On basis of 72 acres covered by this lease, the production per acre to July 1, 1936, has amounted to 84,700 barrels.

Reservoir Pressures and Capacity of Wells

Reservoir conditions have changed greatly since Cary 1 was completed. From an initial pressure of about 2600 pounds, the reservoir pressure has de-

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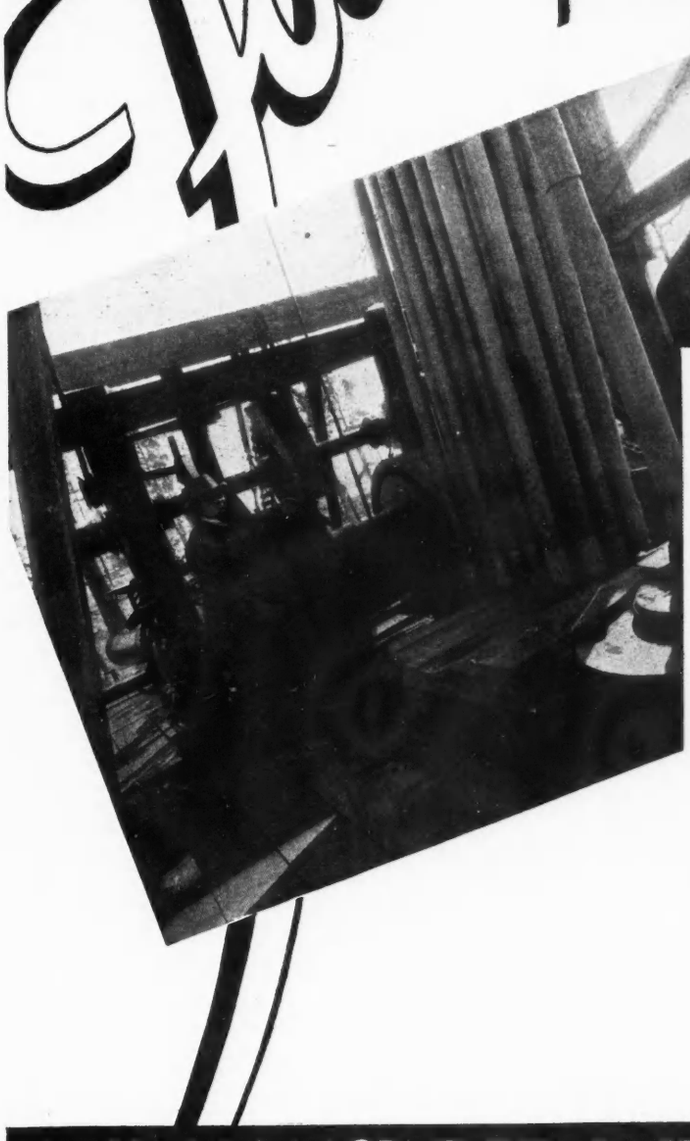

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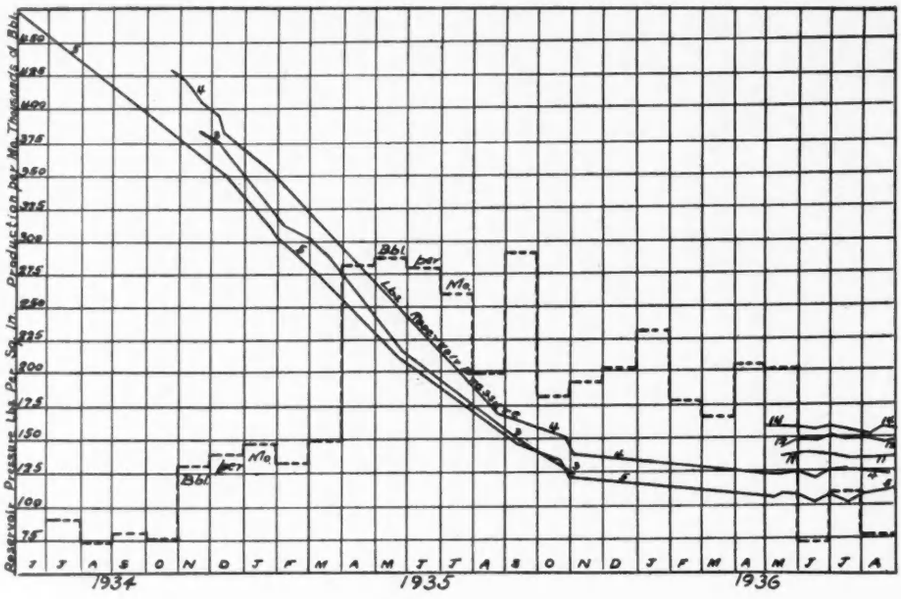


FIGURE 1
Reservoir Pressure in Wells on the Cary Lease — Barrels Production per Month.

clined to an average pressure of 130 pounds for the entire lease. The study of reservoir pressures and of bottom-hole flowing pressures was not started until the reservoir pressure had declined to approximately 475 pounds since which time records have been maintained of this condition. For about a year, it has been possible to make a careful study of reservoir and flowing pressures. Figure 1 illustrates the decline of reservoir pressure beginning at about 475 pounds. This curve shows a fairly regular decline until the pressure reached about 150 pounds after which point, the decline has been very gentle, and for the past six months there has been practically no decline. It has been definitely established that for a given reservoir pressure on this lease, there is a definite production that can be obtained, depending upon the size of the casing in the well. Reservoir, and sand conditions, on this lease so far, are such that the well capacity is definitely dependent on the size of the casing and not on the rate at which the oil will flow into the well. A well can fill up with sand for a distance equal to 25 or even 50 percent of the sand penetration without affecting the production of the well. This indicates that the productive capacity of the wells up to the present time is much beyond the capacity of the outlet from the well.

An example of control curves for determining the proper methods of handling the wells for the current year is shown in Figure 2. These curves illustrate the reservoir pressure, bottom-hole flowing pressures and maximum productive capacity of the well on straight gas-lift. Tests are made from time to time to ascertain whether the well is functioning according to the expectations that can be assumed from the curves, and if such is found not to be the case, investigations are made to ascertain the reason for any discrepancy. Practically all such discrepancies occurring during the past year have been due to deposits of paraffin on the walls of the casing and tubing, and experience has indicated how these troubles may be quickly overcome. For the past six months, guided by these curves, any tendency toward trouble within the wells has been caught and remedied before it reached serious proportions.

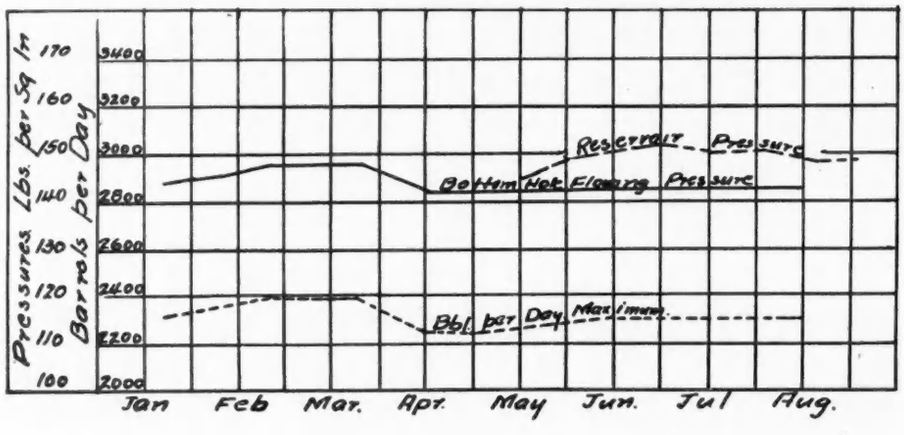
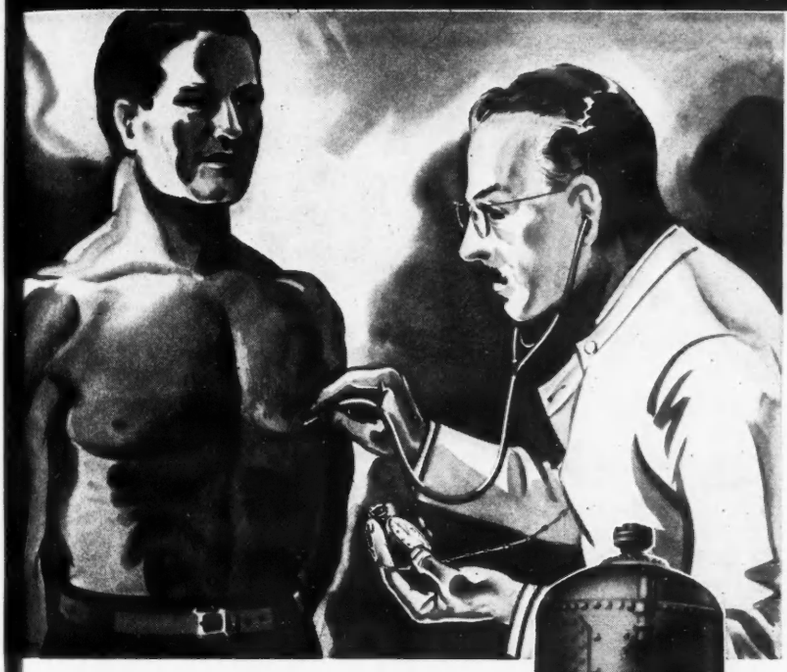


FIGURE 2
Pressure and Maximum Production, Cary 12.

How's the "Heart" of your Boiler?



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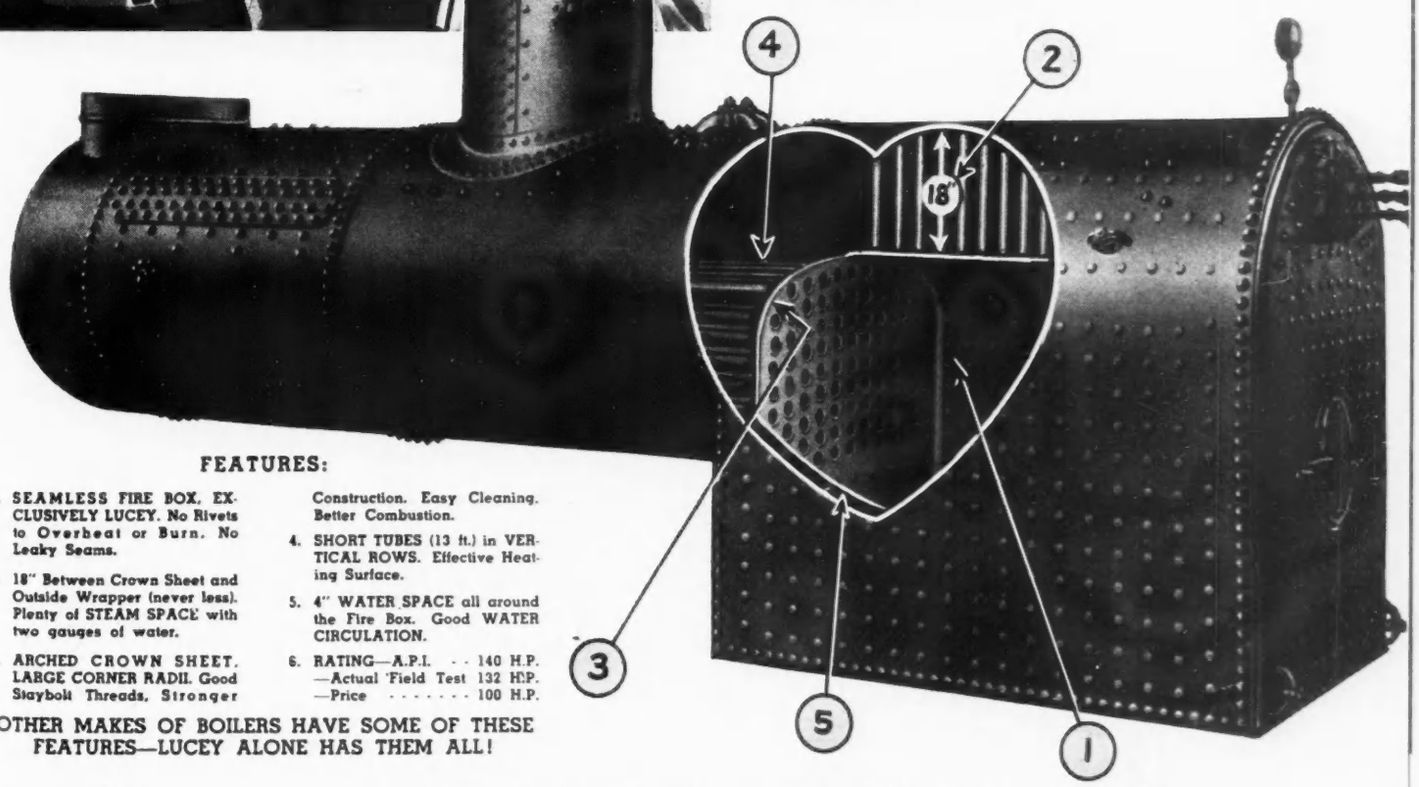

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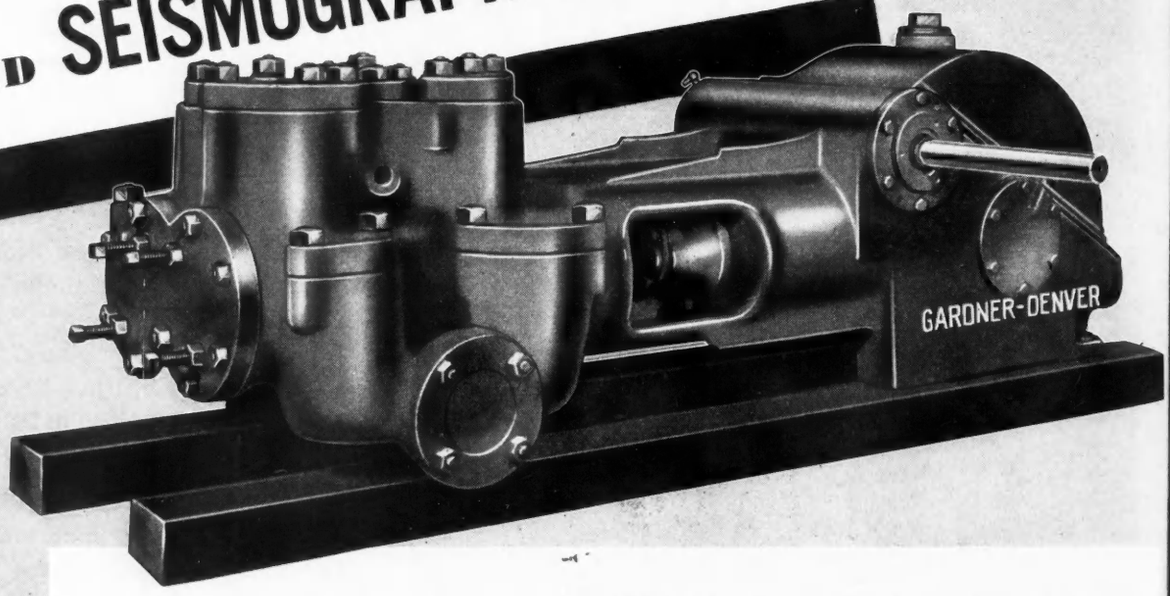

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		Diameter of Fluid Cylinder	Length of Stroke			Diameter	Belt	Suction	Discharge	Slush	Oil & Water	
80-120	325	4½	6	1.6	50-75	24	5	3	2	1½	1¼	2220
63-95	415	4	6	1.26	50-75	24	5	3	2	1½	1¼	2220
35-52	730	3	6	.693	50-75	24	5	3	2	1½	1¼	2220

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Small Rig Powered By Automobile Engine

By FRANK TAYLOR, Staff Writer

CONTRACTORS drilling for O. H. Grimes, independent oil operator of Tulsa, have installed a car motor to power drilling equipment in use in the shallow area of northeast Oklahoma. Unusually fast drilling time has been made with the arrangement and practically no difficulty has been experienced. The rig in use is one built by the contractors, patterned after manufactured types but of slightly heavier construction throughout. As the equipment is not direct connected, operators find it relatively easy to move from a completed well to a new location.

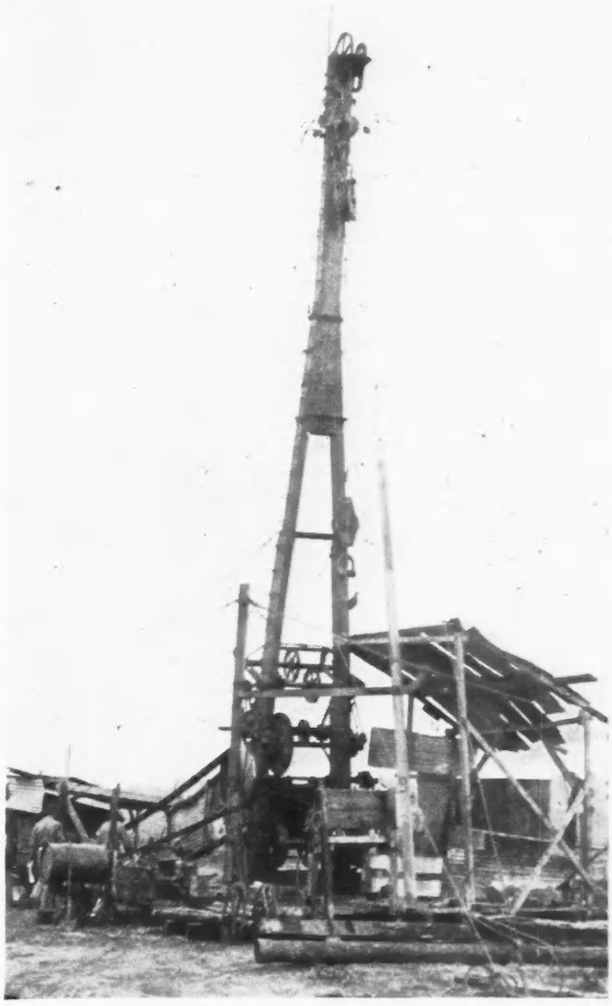
The motor in use was removed from a car frame and mounted on 6-inch channel iron, with cross members as braces beneath the front motor support, the engine side of the transmission and the drive shaft extension. The three supports are welded to parallel "I" beams that are curved up at each end to serve as skids during moving of equipment. The car generator and starter were included in the installation, the battery being held in a welded frame placed to the right of the transmission within the channel iron support.

Rigidity of the unit is assured through angled steel braces bolted to the motor support and to the channel iron frame. The extension of the car drive shaft is through the power pulley and a shaft bearing set in the frame. The driving pulley is mounted close to the transmission to reduce the possibility of excessive vibration. Guy wires to the frame of the unit allow adjustment of the belt tension during setup at a new location and aid in the suppression of vibrations although operation is far more smooth than might reasonably be expected.

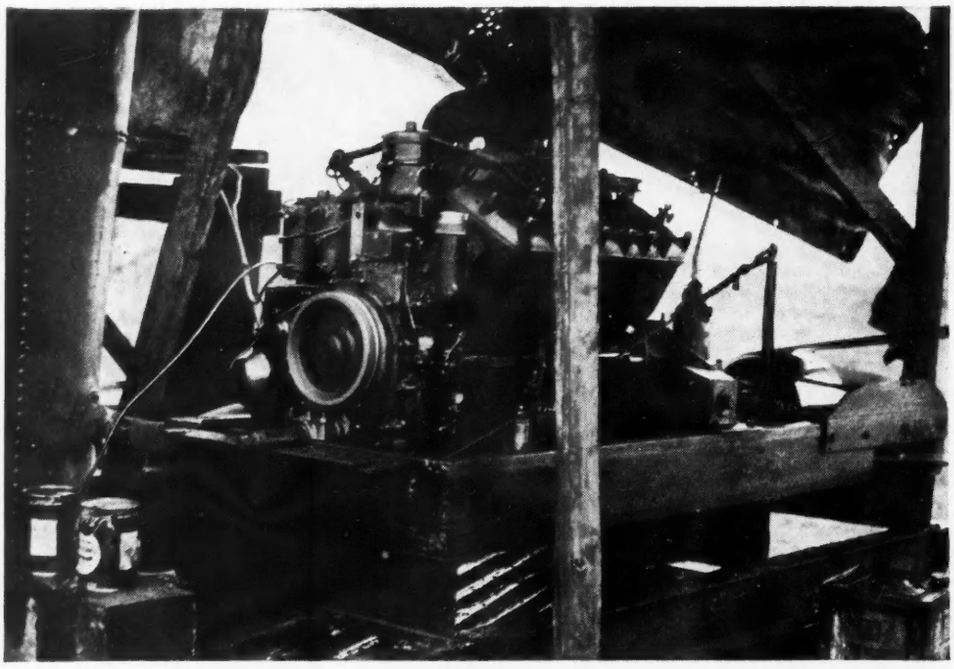
Power is delivered to the rig by a belt over the pulley on the short extension to the drive shaft. A 12-inch pulley is in use with bearings at each side. An 8-inch, 6-ply belt, 58 feet in length, is being used. In order to have sufficient room for belt slap it was necessary to cut the frame of the mounting and to allow a slot on the drive side. An additional piece was set into the frame at this place to preserve the original strength.

The two connections to the water jacket of the motor were retained in the new equipment and serve as connections to an eight-barrel water cooling tank near the motor mount. The original impeller supplies circulation. No great increase in the operating temperature of the motor was noticed although during hot weather it was found that the eight-barrel capacity of the water tank was less than one half the most desirable capacity. Water input into the jacket of the motor is at the bottom in the conventional manner, warm water being discharged from the top hose connection into the adjacent tank.

Control of the motor from the rig floor is by means of a flexible cable of small diameter passing twice around a grooved pulley mounted on the motor. The feed control of the carburetor is connected to a pivotal rest near the center of the control pulley, in such a manner that moving the cable produces a variation in speed by lengthening or decreasing the effective tangent of the control. Cables to the rig are



Rig being used by contractors in drilling the Northeast Oklahoma area where the Burgess sand is found at depths ranging from 700 to 2000 feet. At this particular location the pay was expected between 1150 and 1200 feet.



Front view of engine showing manner of support and hose connections to jacket cooling water tank. Three crossmembers support the frame on the lower skid.

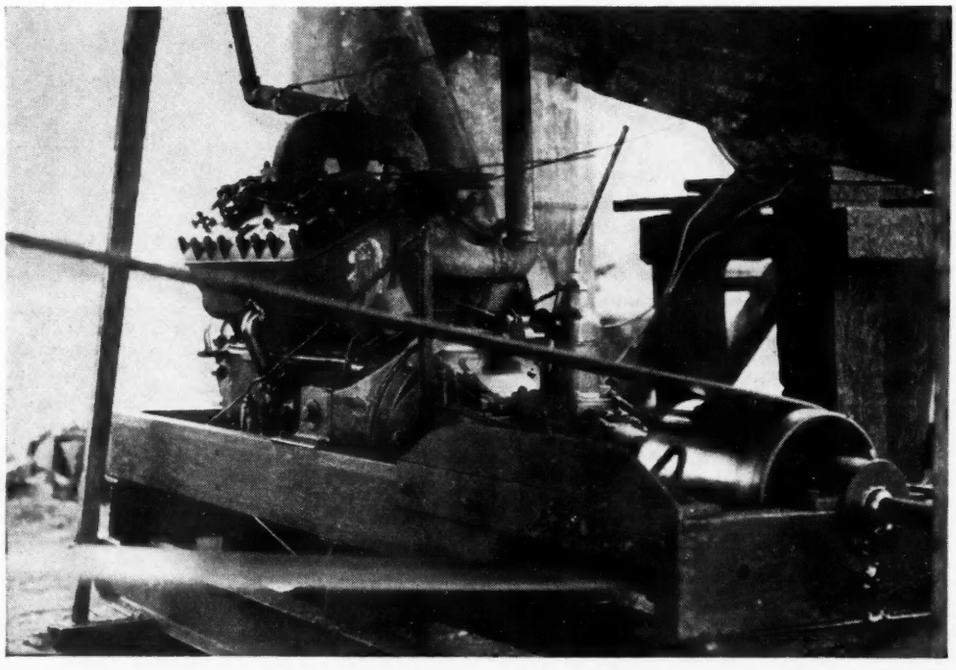
kept tight and out of the way by being passed around smaller guides.

In continuous operation at average depths and in customary formation, contractors found gasoline consumption constant between 50 and 60 barrels, with 54 barrels per day an average. Oil used is only slightly more than would be probable with a car motor in ordinary service. Gasoline is fed to the carburetor by gravity from a tank near the motor.

As much drilling has been done in areas where natural gas was available, contractors obtained a gas corburetor to replace the standard type. No additional equipment is necessary when using gas except a regulator for pressure control. There did not seem to be the usual increase in operating temperature and engine wear that has been a common experience with gasoline motors that are gas fueled.

The unit is driven in high gear during all ordinary operation. When it is necessary to carefully move tools an exact extent, the unit may be operated either in high or low. The only other time such would be necessary would be when trouble developed in the hole. A clutch on the floor of the rig throws the motor out of gear during idle periods.

Unusual speeds were made with the equipment. In one case a string of tools consisting of a jar, a 20-foot stem and an 8-inch by 8-foot bit were pulled from a total depth of 1068 feet in one minute and twenty-four seconds. From 1050 feet, an eight-inch bailer, more than one half full of fluid, was pulled to the surface in 35 seconds. Over a period of 58 hours of operation from 560 feet to 1060 feet, 8.6 feet of hole was made each hour.



Rear view of motor supplying power to shallow drilling equipment. Drive pulley is in right foreground, with manner of installing bearings apparent. To the right of the top of the engine is the grooved pulley by which the carburetor is controlled. Gravity lines to the gasoline supply can be seen above the drive pulley.

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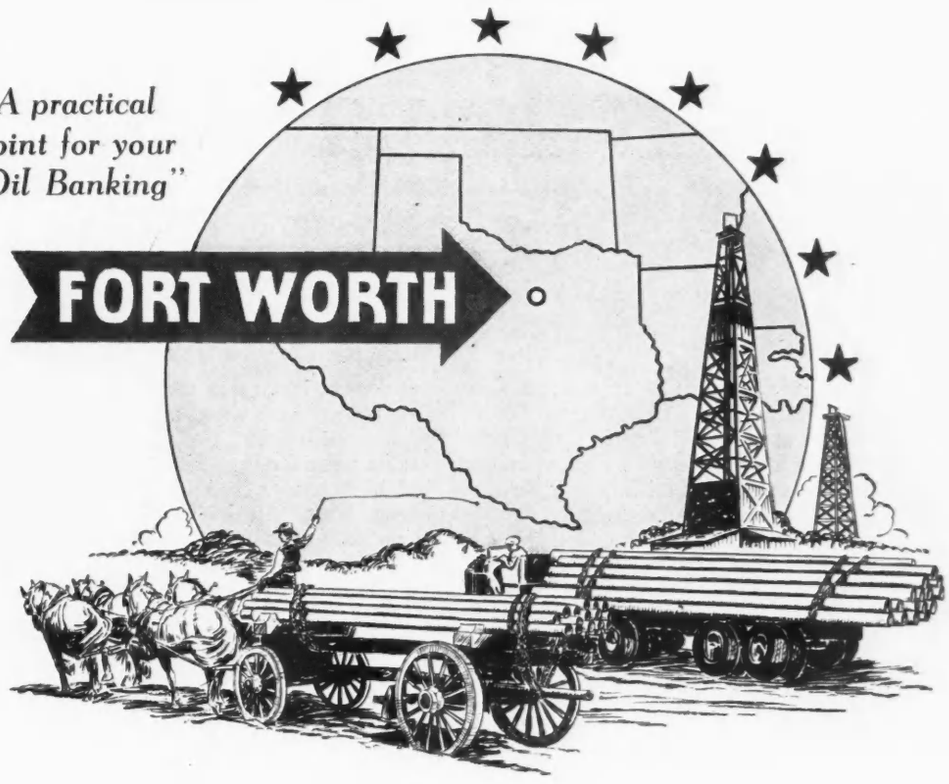

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South Texas Oil Line

By M. D. ALTGELT,
Crude Oil Pipe Line Company,
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IN the construction of Crude Oil Pipe Line Company's line from the Loma Novia field, Duval County, South Texas, to deep water terminal at Corpus Christi, plans were made for the movement of a limited amount of crude. Later demands on the line, however, brought about a problem which was overcome only through efficiency.

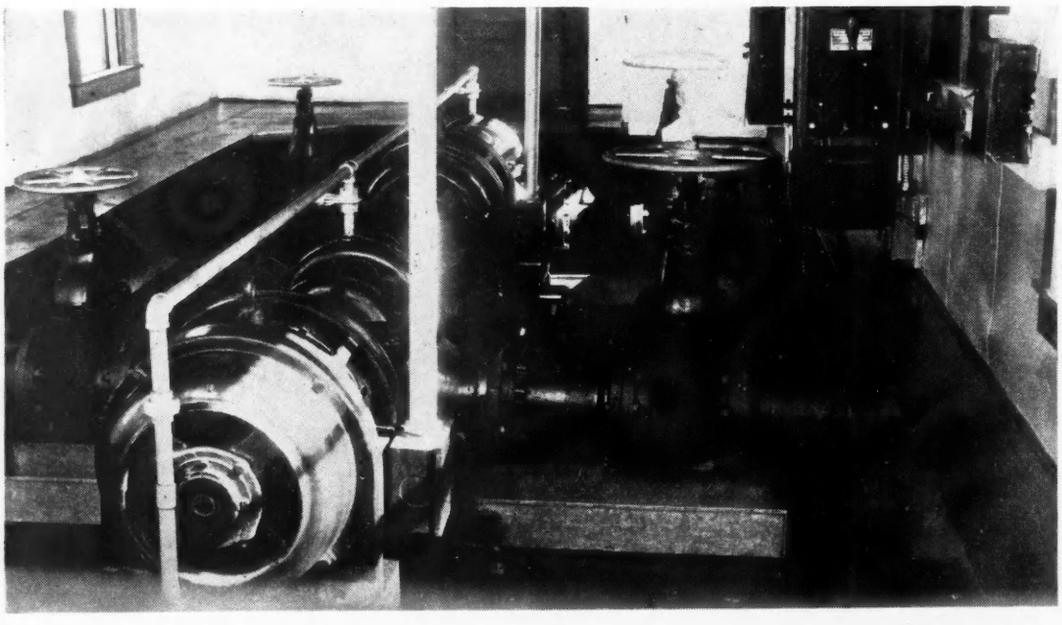
The original system was a 5½-inch main from the Loma Novia field to San Diego loading racks, a distance of about 23 miles. Before the line was completed, it was decided to extend the line to Corpus Christi, a total distance of 78 miles. Three pump stations were constructed, one being located in Section 77 of the Loma Novia field, another adjacent to the town of San Diego and the third at Banquette. Under the maximum pump pressure, approximately 6000 barrels of Duval crude could be moved into the Corpus Christi terminal.

Shortly after completion of this project, the requirements of Crude Oil Marketing and Trading Company necessitated the movement of additional crude through this system. With but two alternatives as to ways in which to increase the capacity of the line; namely, either by looping or installing additional stations, the latter was decided upon in view of the minimum expenditure required, the approximate cost of each of the stations being about $15,000. These stations were installed to permit a maximum delivery of 9500 barrels per day, and were located at points midway between San Diego, Banquette and Corpus Christi.

In the original system, each of the three pump stations were equipped with 4½ by 10 pumps, powered by 55-horsepower Diesel engines. In the Loma Novia area, near Freer, four 10,000-barrel storage tanks were erected. One 10,000-barrel tank was constructed at San Diego and two 5000-barrel tanks were erected at Banquette. The field station operated under a pressure of 380 to 400 pounds, while San Diego operated under 460 pounds and Banquette 430 pounds to move approximately 6000 barrels per day.

These stations were built primarily as booster stations. However, at San Diego, for the purpose of loading oil by rack to tank cars, there was constructed one 10,000-barrel tank, which served the dual purpose of an overflow tank from the main line and storage reserve for loading tank cars; also, in the event of a break from San Diego to Corpus Christi, it would not necessitate a shut-down of the stream from Freer. At Banquette, there was constructed at the time the station was built two 5000-barrel receiving tanks in which to receive oil from a contemplated extension to the Driscoll area, Nueces County, or to receive oil from the main line for storage purposes.

Under the revised set-up, the use of storage along the line has come to serve a two-fold purpose, that of



Pumping equipment at Corpus Christi terminal of Crude Oil Terminal Company.

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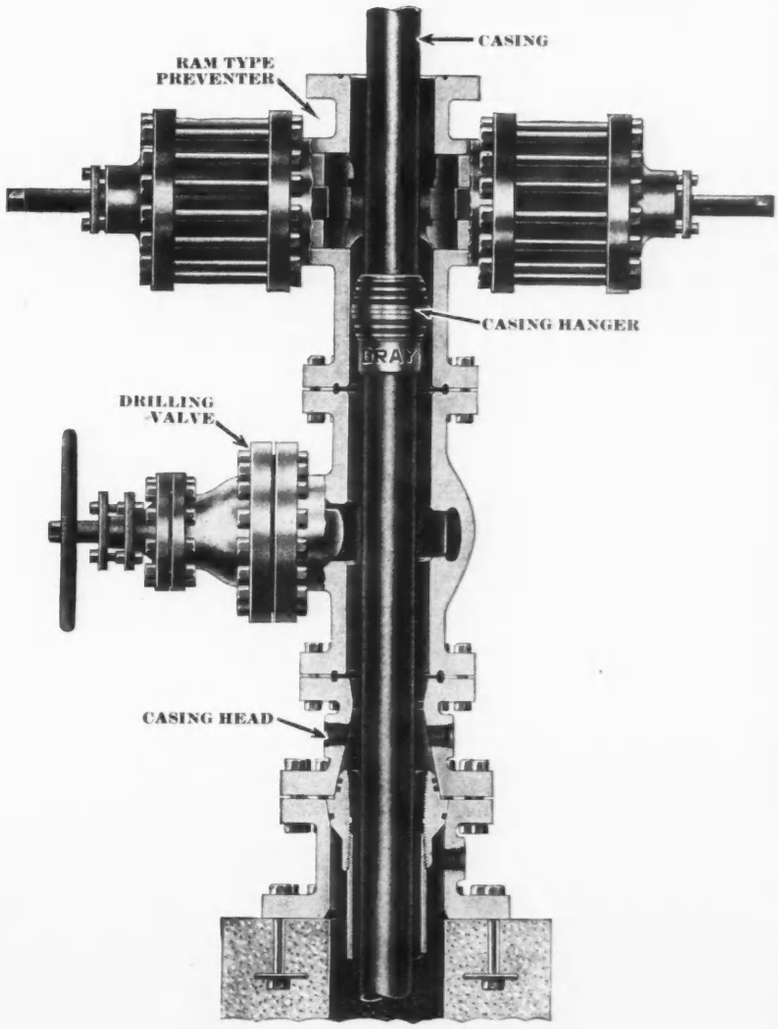

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No. 2 of a series on systems of well control

receiving and holding for storage the crudes of various types which it is necessary to segregate in the strictest manner in view of the variance in specifications under existing export contracts. The other purpose, as before stated, is that in the event of a shut-down at any station, oil may be taken from these tanks to maintain the continued operation of line. The new stations being completed in the system are identical to the present stations with the single exception that the motive power has been increased from 55 horsepower per unit to 75 horsepower, this being necessary to increase the capacity of the line to the amount desired. All calculations have been based on the movement of crude of 80 viscosity at 100 degrees and 23 gravity. Under the present set-up, it is possible to operate all stations at considerable lower pressures than formerly used, which in turn has brought about a considerable saving by reason of fewer repairs to engines and pumps in view of same not being loaded at all times to capacity.

The operating personnel of all stations consists of three men working in eight-hour shifts successively. This feature alone provides considerable advantage in operating economies over the operation of generally accepted main line pump stations by reason of the limited personnel required for the operation. The writer is firmly convinced that future practices in pipe line construction will be the installation of stations which will permit the maximum value upon salvage, together with a minimum initial investment and the minimum of operating personnel which is only permitted through the construction of this type of station, these practices being naturally the controlling elements in the profit and loss of small systems.

Handle Two Types of Crude

One of the unusual features of this system is in the manner of handling its crude. The company has two gathering systems in Duval County, one serving the Loma Novia field and the other the Government Wells field. Crudes from each field vary considerably in gravity and are quite different in viscosity. Each type of crude is in demand by different buyers, hence it is necessary to keep it separated as nearly as possible.

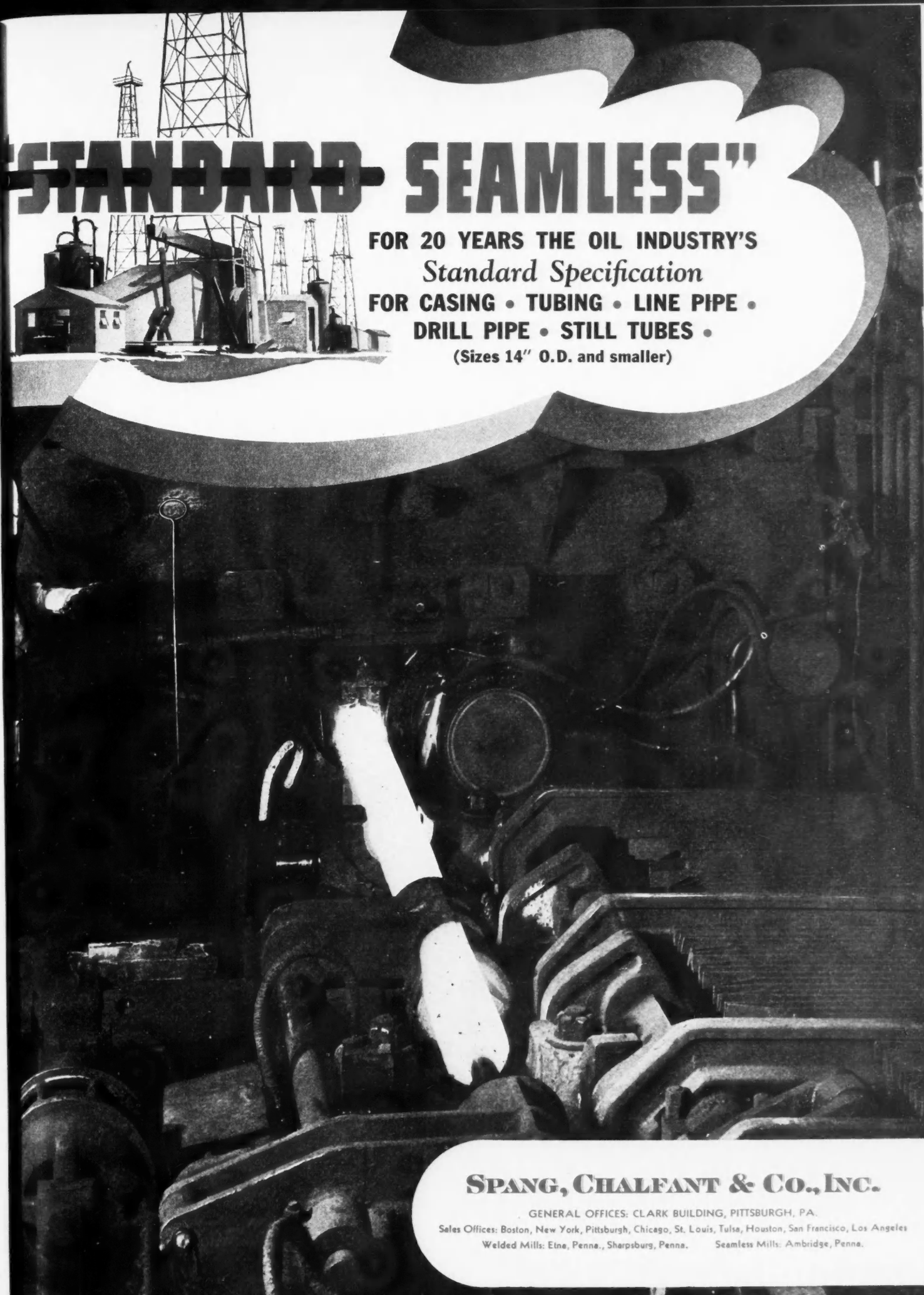
Two 10,000-barrel storage tanks at the field are used for Loma Novia oil, while the other two 10,000-barrel tanks handle Government Wells oil. Crude is pumped into one storage tank while it is being withdrawn from the other, allowing perfect check at all times on the storage. Due to the careful checking of storage, movements of crude, etc., it is possible to keep a most accurate record on the handling of these two types of oil. Upon completing the run of one crude, the other is followed immediately without commingling. At the Corpus Christi terminal, 78 miles away, the crude run can be checked so accurately that the change will be noted at the moment it reaches the end of the line. Not to exceed 50 barrels of crude will be a mixed product as a result of the handling of two types of oil.

At the Corpus Christi terminal, crude is kept separated for the purpose of fulfilling the various types of contracts, both foreign and domestic. In most cases, the oil is adequate to supply the needs of the particular contract, but in several cases, it needs a slight treatment or blending. In the instance of one contract, the flash of the Government Wells type crude is slightly below specifications. This oil is delivered to a 10,000-barrel receiving tank from the trunk line. This tank contains two sets of steam coils, one about 18 inches from the bottom and the other about midway to the top. The crude is heated as it is delivered from the trunk line to a point where it will provide the proper flash. Likewise, in the treatment, any water, etc., is removed. In blending, the several oils are run through the terminal loading pumps at proper ratios, being delivered to the tankers at the right specifications.

Safety through cleanliness is one of the main features of the entire system. It is a regular rule to keep all pump stations and equipment spotless. The removal of oil, dirt, etc., from the floors, and the replacing of all tools to their cabinets has proved to be one of the outstanding ways of keeping the buildings in an absolutely safe working condition. Likewise, fire hazards are reduced to a minimum.

The above cleanliness feature is well handled in the hook-up of the loading unit at the deep water terminal. In handling crude from various tanks, there frequently is an overflow of oil. As this oil backs up, it is carried off through sumps connected to the pumps. It is then picked up by the unloading pump and returned to storage.

Interior of San Diego pump station.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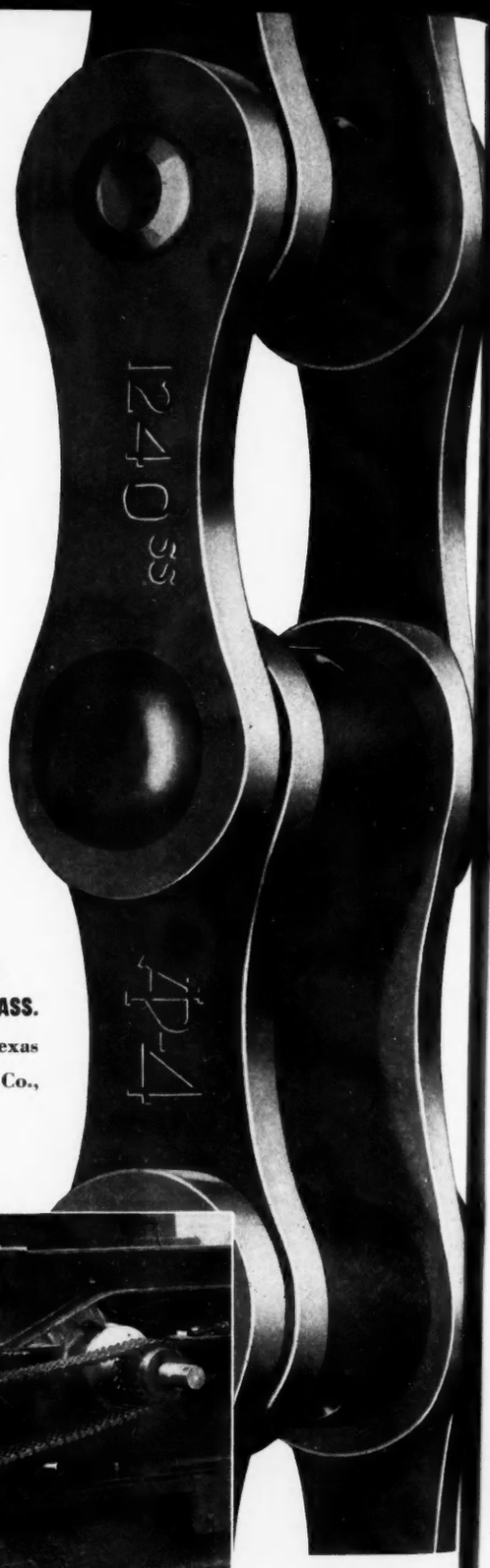

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Crude Prices Up

HEAVY GRADES ADVANCED FIVE CENTS PER BARREL LAST WEEK

THE markets lately have exhibited strength exceeding most expectations. It had been foreseen that fuel oil and kerosene prices would be on the up-grade with the advent of cold weather. But gasoline consumption also has been holding up remarkably well, and the gasoline market has become steadier, following some weakening recently.

The crude oil market also has demonstrated unexpected strength, through last week's small increases in postings in everal fields.

Apparently reflecting the current strong demand for fuel oils, prices were raised 5 cents a barrel on the heavy crudes produced in several fields of the Texas Gulf Coast and at the new Talco field, northeastern Texas. A 5-cent increase was announced also for Western Kentucky crude.

Within the same week, however, crude prices were reduced slightly in several fields of the Rocky Mountain states.

Crude Prices Raised

Most of the purchasers quickly followed the lead of The Texas Company, which on November 2 posted higher prices, effective November 1, for fields of the Corpus Christi and Mirando districts of South Texas.

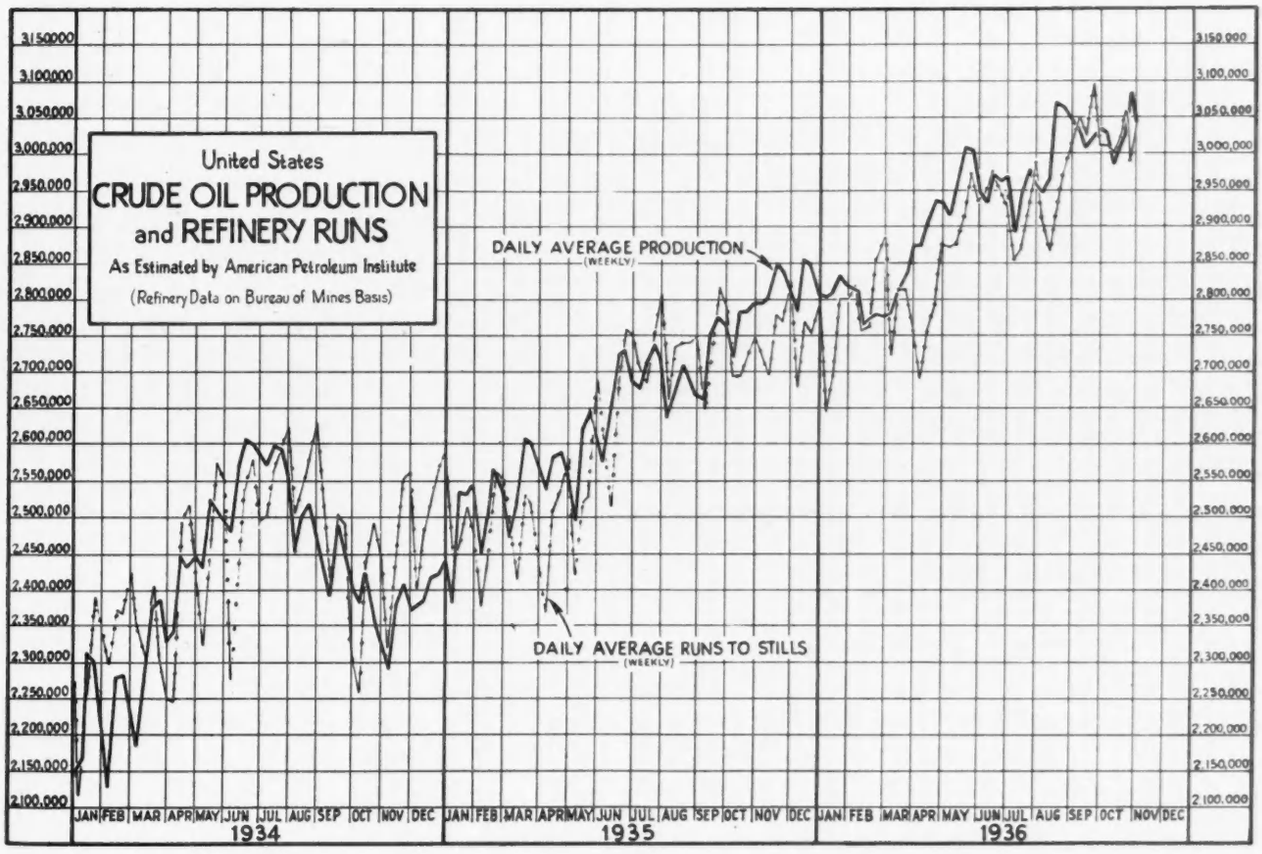
The company advanced postings from 90 to 95 cents a barrel for the heavy crudes from the Greta, Saxet, and Taft fields, and raised the Duval County posting from 85 to 90 cents a barrel.

Magnolia Petroleum Company met the higher prices of The Texas Company November 3, when it raised its posting, effective November 1, from 85 to 90 cents a barrel for Mirando crude.

The 5 cent increase was extended to the Talco field, Titus and Franklin counties, northeastern Texas, on November 3, when Humble Oil & Refining Company issued a new price bulletin, retroactive to November 1. The Talco posting was raised from 60 to 65 cents a barrel. That Talco increase was met subsequently by Talco Pipe Line Company and Sander-Murchison Pipe Line Company, independent purchasers.

Postings in New Fields

Humble Oil & Refining Company's new schedule also met the increases in South Texas and added several fields where postings had not been made previously. The new postings listed at 95 cents a barrel the heavy crude (commonly known as Refugio heavy) purchased in the Saxet, Greta, O'Connor-McFadden, and Taft fields. A new posting of 90 cents applied on the heavy crude, Mirando type, purchased in Duval, Jim Hogg, Nueces, Webb and Zapata counties, Texas, and in the Heyser and Placedo fields. The Humble schedule added Flour Bluff and Turtle Bay crudes under the Anahuac and Dickinson gravity scale posting that ranges by 2-cent differential from $1.04 for 30-30.9 gravity to $1.24 for 40 gravity and above. Plymouth, Quintana-O'Connor, and North Quintana fields, of the lower Gulf Coast region, were listed along with the regular Gulf Coast fields (Goose Creek, Barbers Hill, etc.) at 88 cents for 18 gravity and below, 90 cents for 18-18.9 gravity, and a 2 cent differential for each degree of gravity up to $1.22 for 34 gravity and above. Heyser light crude was posted by Humble at $1.15 a barrel, and Satsuma was posted along with Tomball at $1.30. The price of 97 cents for Salt Flat and



Darst Creek crudes, south-central Texas, was adopted by the Humble Company as initial postings in the Hilbig, Carroll, Clark (South Darst Creek) and Zoboroski fields of Bastrop and Guadalupe counties.

Purchasers Fall in Line

Southern Pipe Line Company (Southern Minerals Corporation, of Corpus Christi) on November 3 met the new low gravity postings in the Saxet area, effective November 1.

Crude Oil Pipe Line Company, of San Antonio and Corpus Christi, on November 4 announced that it had met the 5 cent increase, retroactive to November 1, in the Mirando fields.

Saxet Heights Pipe Line Company, of Corpus Christi and San Antonio, and an affiliate of the Crude Oil Pipe Line Company, met the Saxet Heights increase November 4, retroactive to November 1.

Potter Pipe Line Company, Corpus Christi, was reported to have increased the price on Saxet and Saxet Heights low gravity crude, but confirmation was not available.

Atlantic Petroleum Purchasing Corporation, of Dallas, announced November 4 that it had met the increase on the low gravity oils of the Refugio-Greta district, raising its posting from 90 to 95 cents a barrel.

Valley Pipe Line Company November 4 announced an increase of 5 cents per barrel for Sanfordyce field crude, bringing the posting to 95 cents a barrel. The new price was effective November 1. Other crude buyers in the district met the increase.

From Findlay, Ohio, came the announcement November 5 that The Ohio Oil Company had posted an increase of 5 cents a barrel, effective November 1, for West Kentucky-Owensboro crude, the new price being $1.28 a barrel.

Effective November 1, The Ohio Oil Company made a 3½-cent reduction in its posting for Rock Creek, Wyoming, crude, marking the price down to $1.08½ per barrel.

East Texas Tank Car Shipments

Week Ending November 1, 1936

PRODUCTS	No. Cars	Estimated Gallons
Gasoline	671	5,390,523
Fuel Oil	272	2,619,297
Casinghead Gasoline	117	1,044,354
Distillate	73	595,636
Gas Oil	29	235,592
Kerosene	12	93,339
Residuum	9	72,779
Naphtha	5	40,482
Topped Crude	4	38,295
Total	1,193	10,130,407
Total Previous Week	1,180	10,029,397
Interstate	546	.....
Intrastate	376	.....
Coastwise	271	.....
Total	1,193	.....

Larger reductions, ranging from 8 to 10 cents a barrel, were announced by Stanolind Oil & Gas Company November 4, effective on the same date, for several Rocky Mountain fields. Frannie light crude was cut 8 cents a barrel, or to 70 cents. Frannie heavy crude was reduced 10 cents, to a new price of 62 cents a barrel. Grass Creek heavy crude was cut 10 cents, or to 62 cents a barrel. Hamilton Dome crude was reduced 10 cents on the Stanolind schedule, to a new posting of 57 cents a barrel.

Relatively heavy purchases by the larger companies last week greatly improved the Mid-Continent gasoline tank car markets, taking off the market most of the surplus material. The market was perceptibly steadier in East Texas and in the Oklahoma region, although there was not any material strengthening of the market in the Chicago area.

In East Texas, part of the ground lost by the gasoline market the previous week was regained last week, as fully tendered U. S. motor gasoline below 62 octane in some instances brought 4⅝ cents a gallon, compared with a general price of 4½ cents the week before.

In the other districts of the Mid-Continent the gasoline tank car prices remained unchanged. The prices prevailing on U. S. motor gasoline f.o.b. Oklahoma refineries appeared to range as follows: 62 octane and below, 4⅝ to 4⅞ cents a gallon, 63 to 67 octane, 5 to 5⅜ cents, and 68 to 70 octane, 5⅝ to 5¾ cents.

Corresponding tank car prices in the Chicago market were 4½ to 4¾ cents, 4¾ to 5¼ cents, and 5⅜ to 5¾ cents.

Fuel Prices Rise More

With demand continuing strong and supplies relatively scarce, fuel oils had a firm market, and prices worked further upward on some grades. In the Oklahoma market, the No. 1 oils, f.o.b. refineries, ranged from 3¼ to 3⅜ cents, and the No. 2 oils from 3⅜ to 3¼ cents, these prices being unchanged from the previous week. The prices in the Chicago market were 3⅜ to 3⅝ cents for the No. 1 oils, or the same as in the previous week, and 3 to 3¼ cents for the No. 2 grades, which had improved one eighth cent.

Kerosene prices remained generally unchanged. At the Oklahoma refineries, the 41-43 water white grade was priced at 3⅜ to 3½ cents, and the 42-44 water white grade at 3½ to 3⅝ cents. Corresponding prices in the Chicago market were 3¼ to 3⅜ cents and 3⅜ to 3½ cents.

BUY GASOLINE

400 cars are purchased following break in price

Tyler.—Majors purchased in excess of 400 cars of federal tendered gasoline from East Texas refineries following a break in the spot price to 4-1/3 to 4½ cents per gallon the past week. Stocks of motor fuel began piling up rapidly when the plant owners attempted to advance their quotations from 4½ to 4⅝ cents about mid-October. Support given the distressed market by the majors has wiped out the bulk of the distress offering, and late last week refiners were demanding 4½ cents per gallon.

East Texas refiners have refused to heed repeated warning by market leaders that a reduction of runs to stills must occur to maintain prices on refined products at a profitable level.

Summary of Wells Completed in the United States Week Ending November 7, 1936

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1936	Total [1] Completions this Date 1935
Alabama	....	....	....	....	.....	2	4
Arkansas	1	....	....	1	.....	79	112
California	12	8	....	4	3,175	973	746
Colorado	1	....	1	....	.....	14	10
Florida	....	....	....	....	.....	1	....
Illinois	....	....	....	....	.....	4	9
Indiana	....	....	....	....	.....	160	170
Kansas	35	28	....	7	38,000	1,437	1,215
Kentucky	....	....	....	....	.....	238	149
Louisiana	33	25	1	7	23,174	884	619
Michigan	11	3	3	5	125	672	491
Mississippi	....	....	....	....	.....	6	18
Montana	5	3	....	2	58	159	148
New Mexico	7	7	....	....	6,056	489	244
New York	....	....	....	....	.....	....	....
Ohio	25	2	17	6	8	1,637	1,250
Oklahoma	51	36	1	14	85,840	2,475	2,058
Pennsylvania	....	....	....	....	.....	....	113
Texas	293	209	9	75	257,574	10,769	10,162
Utah	....	....	....	....	.....	....	1
West Virginia	....	....	....	....	.....	548	424
Wyoming	1	1	....	....	1,200	73	62
Total this week	475	322	32	121	415,210	20,620	18,026
Total last week	476	325	45	106	431,740	....	....
Total this year	20,620	13,841	1,941	4,838	19,375,689	....	....

Comparison of Permits Granted for New Wells

STATE	Week Ending Nov. 7	Total this Mo.	Total this Year	Total this Date Last Year	1935 Year Total
Arkansas	1	1	84	54	70
California	22	22	911	838	925
Louisiana	21	21	1,002	736	846
Kansas	38	38	1,587	1,005	1,204
Michigan	23	23	629	642	749
Oklahoma	51	51	2,141	1,966	2,311
Texas	261	261	13,354	9,574	10,800
Total	417	417	19,708	14,815	16,964

PRODUCTION DROPS
65,000-barrel decline is recorded in U. S. output

United States crude oil production during the past week, ended November 7, averaged 2,969,550 barrels daily, according to the regular estimates compiled by The Oil Weekly. That was 66,650 barrels a day less than in the previous week, but 99,250 barrels a day more than the Bureau of Mines recommendation.

The decrease from the previous week reflected the new lower allowables in Texas and substantial declines in output in Oklahoma and Kansas. California showed the usual early month increase, and output was a little higher also in Louisiana and New Mexico.

Although Texas production was down to 1,157,600 barrels daily last week from 1,195,900 barrels the previous week, a decrease of 38,300 barrels, the full effect of the cut in the state's allowable had not yet been reflected, and a further substantial drop is due to be reflected in the figures for this week. Last week's figure still was 48,300 barrels above the amount recommended by the Bureau of Mines, and under the Texas allowables for November, the state is due to come down close to the federal allocation.

Oklahoma last week averaged 526,800 barrels daily, or 37,950 barrels a day less than in the previous week, and 31,600 barrels a day less than the federal allocation.

Kansas production last week averaged 143,450 barrels daily, or 20,000 barrels a day less than in the previous week, and 11,050 barrels a day less than the federal quota.

California output jumped 24,500 barrels above the previous week's level, averaging 588,500 barrels daily, or 38,900 barrels a day more than the federal allocation.

New Mexico last week averaged 82,600 barrels daily, or 1500 barrels a day more than in the previous week and 7,000 barrels a day more than the federal quota.

Louisiana produced 234,500 barrels daily, which was 1275 a day less than in the previous week and 35,900 barrels a day more than the Bureau of Mines recommendation.

GASOLINERS MEET

Los Angeles.—The fall meeting of the California Natural Gasoline Association held its session at the Biltmore Hotel in Los Angeles November 5. The feature of the morning session was the address by President R. D. Gibbs, Union Oil Company. The morning session was presided over by William Moeller, Jr., Southern California Gas Company. Managing Director F. E. Foster of California Oil & Gas Association discussed the natural gas industry of the state, and this address was followed by a report of the technical committee, all individual chairmen being introduced. W. C. Dayhuff acted as chairman of this part of the program.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Nov.)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING Nov. 7	Oct. 31
TEXAS—			
Texas Panhandle	.....	64,700	65,900
North Texas	.....	64,500	65,400
West Central Texas	.....	32,800	33,700
West Texas	.....	158,400	170,200
East Central Texas	.....	65,100	71,000
*East Texas Field	.....	440,600	439,700
South Texas	.....	167,300	170,900
Texas Gulf Coast	.....	164,200	179,100
*Total Texas	1,109,300	1,157,600	1,195,900
OKLAHOMA—			
Oklahoma City	.....	116,275	139,750
Seminole Area	.....	130,575	133,425
Tatums	.....	3,350	3,250
Lucien	.....	13,150	13,175
Fitts	.....	58,100	69,050
Edmond	.....	12,275	13,125
Others	.....	193,075	192,975
Total Oklahoma	558,400	526,800	564,750
KANSAS—			
Ritz-Canton	.....	5,750	5,775
Voshell	.....	2,800	2,800
Nikkel-Hollow	.....	3,600	3,700
Sedgwick	.....	4,925	13,475
Burrton-Haury	.....	13,475	13,125
Lorraine	.....	3,400	6,125
Oxford	.....	3,850	3,900
Others	.....	105,650	123,075
Total Kansas	154,500	143,450	163,425
LOUISIANA—			
North Louisiana	.....	76,400	75,525
Louisiana Gulf Coast	.....	158,100	157,700
Total Louisiana	198,600	234,500	233,225
ARKANSAS	28,100	28,300	27,500
CALIFORNIA—			
Long Beach	.....	65,500	65,000
Santa Fe Springs	.....	45,000	44,000
Huntington Beach	.....	36,500	36,000
Dominguez	.....	25,000	24,500
Inglewood	.....	11,000	11,500
Ventura Avenue	.....	33,000	33,500
Seal Beach	.....	9,000	9,500
Midway-Sunset	.....	65,000	50,000
Elwood	.....	12,000	11,500
Kettleman Hills	.....	80,000	77,000
Mountain View	.....	21,500	22,000
Playa del Rey	.....	11,500	11,500
Others	.....	173,500	168,000
Total California	549,600	588,500	564,000
MOUNTAIN STATES—			
Wyoming	40,100	40,200	40,800
Montana	14,300	15,600	15,700
Colorado	4,400	4,800	4,900
Total Rocky Mountain States	58,800	60,600	61,400
NEW MEXICO	75,600	82,600	81,100
EASTERN STATES	108,400	116,400	114,500
MICHIGAN	29,000	30,800	30,400
*Total United States	2,870,300	2,969,550	3,036,200
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	.....	10,000	10,000
Grand total including surreptitious production	.....	2,979,550	3,046,200

Bureau Report

SEPTEMBER PRODUCTION WAS LOWER THAN IN AUGUST

Washington, D.C.—A four million barrel drop in oil production, a decline of 45,000 barrels from the August daily average of 3,067,000 barrels to 3,032,000 barrels, brought total output for September down to 90,972,000 barrels, according to the monthly report of the Bureau of Mines, issued November 6. August production was 95,090,000 barrels and that for September, 1935, was 84,109,000 barrels.

Completing the first three quarters of the year, the bureau reported that crude production for the first nine months was 814,051,000 barrels, an increase of nearly 83,500,000 barrels over the 730,595,000 barrels produced in the same period last year.

Features of the oil situation during the month, as shown by the report, were a new record in crude runs to stills and an unexpectedly high demand for gasoline.

Practically all the decline in crude production in September was in Texas, the combined output of the other states remaining virtually stationary, the bureau announced. California registered a slight increase to a daily average of 579,200 barrels, while Oklahoma showed a small decline to 581,200 barrels, decreases at Oklahoma City and Seminole being largely compensated by gains elsewhere. All the major districts of Texas registered declines in output. East Texas field falling from an average of 467,200 barrels in August to 442,000 barrels. Production in Louisiana reached a new high of 232,200 barrels daily, a material gain in the coastal district overbalancing a decline at Rodessa.

Production in Kansas showed a small decline from the record of the previous month, but New Mexico established a new record at 76,200 barrels daily.

"Crude runs to stills, which established a record in August, rose to a new peak," the bureau reported, "The daily average in September was 3,029,000 barrels compared with an average of 3,104,000 barrels in August. With daily production declining 45,000 barrels, it follows that more oil was withdrawn from storage in September than in August. The decline in September was 6,064,000 barrels, which brought stocks down to 295,693,000 barrels.

The yield of gasoline in September was reported as 44.8 percent, the highest since October, 1935.

The domestic demand for gasoline in September exceeded the estimates of even the most optimistic observers, amounting to 44,346,000 barrels, or 17 percent higher than the comparable figure of a year ago.

The report said: "Exports of motor fuel showed a further increase, but the total of 2,491,000 barrels was considerably under exports of last September. The net withdrawal from finished and unfinished gasoline stocks in September was 1,696,000 barrels, which brought stocks down to 57,800,000 barrels as of September 30."

SEPTEMBER REPORT

Texas' production was 34 million bbls. in month

Austin.—The Bureau of Oil Accounting of the Texas Railroad Commission has announced that reports on September production indicate that a total of 34,502,862 barrels was produced during that month, an average of 1,150,862 barrels per day.

During that period the allowable for the state totaled 35,105,678 barrels, an average of 1,170,189 barrels per day. The production during the month, according to a report issued by Olin Culberson, Director of the Bureau, was 654,616 barrels less than the total production for the month of August.

An increase of 1351 producing oil wells was reported. There were 65,430 producers listed, of which 26,407 were flowing wells and 39,023 were pumping wells.

Pipe line receipts totaled 34,196,647 barrels, which was 25,112 barrels in excess of the amount run to lines by the producers.

A total of 37,397 barrels was moved by tank car, 134,826 barrels was shipped by truck, 23,905 barrels was consumed as fuel oil and 24,419 barrels went to miscellaneous uses.

Storage decreased 15,582 barrels during September, leaving 4,175,723 barrels on hand at the end of the month.

GOVERNMENT BIDS

Washington, D. C.—Bids for the purchase of government royalty oil from the Salt Creek, Wyoming, field, for an indefinite period beginning January 1, next, will be opened by the Secretary of the Interior December 1, it was announced this week.

At the present time, the government is securing about 14 percent of the oil production of the field, and during the first eight months of 1936 received 497,233.99 barrels. In 1935 it secured 785,941.76 barrels and in 1934, 819,646.88 barrels.

Separate record is kept of the oil secured from leases operated by the Stanolind Oil & Gas Company, which amounted to 367,548.04 barrels during the first eight months of this year, 584,259.77 barrels in 1935 and 619,180.25 barrels in 1934, and of that secured from all other leases, which amounted to 129,685.95 barrels during the eight-months' period, 201,681.99 barerls in 1935 and 200,466.63 barrels in 1934. The average gravity of the oil in all years was in the range from 36 to 36.9 degrees, A.P.I.

Proposals sent out by the Interior Department call for bids on four items, the first on all the royalty oil accruing to the government from leases not operated as of October 1, 1936, by the Stanolind Oil & Gas Company, and the other three for one third, each, of the royalty oil accruing from the Stanolind leases.

The bids may be made for a term of one, three or five years, and bidders may submit a separate offer for any or all of those periods.

TULSA OIL SHOW

To be held May 14 to 21 during year 1938

Tulsa.—The next international Petroleum Exposition will be held in Tulsa May 14 to 21, 1938, according to an announcement prepared by President W. G. Skelly for release at the A. P. I. meeting in Chicago.

"The 1938 show was announced at the last show in May since the Exposition at the request of the oil industry had determined on an every-other-year show," said Skelly. "But the actual dates, nor specific plans had not been worked out."

"The Exposition will celebrate its fifteenth anniversary and hold its tenth show, being the first and oldest oil show, as well as the largest industrial show of any industry," stated General Manager W. B. Way.

"Announcement of the dates earlier than usual is being made to allow heavy equipment manufacturers to have plenty of time to prepare the kind of a display they desire to exhibit and to give the exposition more time to publicize the show and secure a large attendance of key oil men in the industry," said Skelly.

Way declared that he had already received requests for space totaling nearly 75 percent of that available. Exhibitors at the 1936 show will be given first option on their old space, and new exhibitors and those desiring additional space will find their requests filled in the order received.

The executive committee is planning on a special celebration for the fifteenth anniversary. They include Skelly; Way; O. T. Dawson, vice president, National Supply Company; Clyde Pape, treasurer, Selby Oil & Gas Company; Alf G. Heggen, president, Oil Well Improvements Company; W. M. Bovaird, president, Bovaird Supply Company; and Frank Hinderliter, president, Hinderliter Tool Company.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to November 6, 1936)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$0.94	2¢	40—$1.18	1- 9-36
N. and N.-C. Texas	28— .84	2¢	40— 1.08	1- 9-36
exas Panhandle				
Gray County	34— .86	2¢	40— .98	1- 9-36
Carson-Hutchinson	34— .81	2¢	40— .93	1- 9-36
West Texas				
Ector, Pecos, Winkler Crane, Upton, Howard and Glasscock	29— .76	2¢	36— .90	1-14-36
West Central Texas	28— .84	2¢	40— 1.08	1- 9-36
East Central Texas	28— .91	2¢	40— 1.15	1- 9-36
East Texas	*1.15			1- 9-36
Talco	* .65			11-1-36
Texas Gulf Coast				
Anahuac - Dickinson, Flour Bluff, Turtle Bay	30— 1.04	2¢	40— 1.24	1- 9-36
Conroe	35— 1.24	2¢	40— 1.34	1- 9-36
Tomball, Satsuma	*1.30			1- 9-36
Cleveland	*1.00			1-11-34
†Goose Creek, Hull, Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 17— .88	2¢	34— 1.22	1- 9-36
South and S. W. Texas	Below			
Refugio (Light)	17— .88	2¢	34— 1.22	1- 9-36
Refugio (Heavy)	* .95			11- 1-36
Saxet (Light)	*1.22			10- 1-36
Saxet (Heavy)	* .95			11- 1-36
Mirando	* .90			11- 1-36
Pettus	*1.25			1- 9-36
Salt Flat	* .97			1-14-36
Darst Creek	* .97			1-14-36
Placedo (Heavy)	* .90			11- 1-36
Placedo (Light)	* .95			4- -36
Port Lavaca	* .97			
Heyser (Light)	*1.15			11-1-36
Heyser (Heavy)	* .90			11-1-36

* All gravities—flat rate.
Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Arkansas				
El Dorado (Light) and Rainbow	25—$0.78	2¢	40—$1.10	1-10-36
El Dorado East Field and Smackover	* .75			1-10-36
North Louisiana	25— .78	2¢	40— 1.10	1-10-36
Urania	* .97			1-10-36
South Louisiana	Below			
Lockport	19— .92	2¢	34— 1.22	1- 9-36
Iowa Cameron Mds.	19— .82	2¢	34— 1.12	1- 9-36
Rocky Mountain States				
Salt Creek	29— .94	2¢	40— 1.18	1-10-36
Elk Basin	*1.18			7-20-36
Grass Creek (Light)	*1.18			7-20-36
Grass Creek (Heavy)	* .62			11- 4-36
Big Muddy	*1.11			1- 9-36
Rock Creek	*1.12			1- 9-36
Sunburst	*1.15			6- 5-36
Lance Creek	* .90			1- 9-36
Osage	*1.08			
Cat Creek	*1.07			8-25-33
Cut Bank	*1.35			6- 3-36
Pondera	*1.05			9-29-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	* .75			9-29-33
Mid-West States				
Lima	*1.15			9-18-36
Illinois	*1.23			1- 9-36
Princeton	*1.23			1- 9-36
Western Kentucky	*1.28			11-1-36
Pennsylvania				
Bradford	*2.45			1-13-36
Sw. Pa. Pipe Line	*2.17			1-13-36
Eureka Pipe Line	*2.12			1-13-36
Buckeye Pipe Line	*1.97			1-13-36
Corning Grade	*1.32			9-18-36
Michigan				
Central Michigan	*1.32			9-16-36
Muskegon	* .70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33
Mexico				
F.O.B. Tampico	‡0.895			

* All gravities—flat rate.
‡ Average price, all oil sales being to small refineries.
† U.S. Currency, buyer pays tax.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut *4
September 6, 1935	Up 5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up *28
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up *9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....
February 26, 1936	.....	.....	Up ‡5

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

TEXAS—2¾ cents or 2¾ percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and 3⅜ of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.
• Signal Hill 26 gravity.
‡ Seal Beach 26 gravity.

CALIFORNIA OIL PRICES

(All gravities above those quoted take highest prices of that field. Effective February 26, 1936)

Gravity	Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs	New Hall McKittrick Kern River Round Mountain	Mountain View	Midway-Sunset Buena Vista Hills Elk Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$.80	$.79	$.78	$.79	$.80	$.76	.....	.....	$.80	$.76	$.76	$.77	$.78	.....	$.70	.....	$.70	$.70	$.70	.....
15-15.9	.80	.79	.78	.79	.80	.76	.....	.....	.80	.76	.76	.77	.78	.....	.70	.....	.70	.70	.70	.....
16-16.9	.80	.79	.78	.79	.80	.76	.....	.....	.80	.76	.76	.77	.78	.....	.70	.....	.70	.70	.70	.....
17-17.9	.80	.79	.78	.81	.80	.76	.....	.....	.80	.76	.76	.77	.78	.....	.70	.....	.70	.70	.70	.....
18-18.9	.80	.79	.78	.84	.80	.78	.....	.....	.82	.76	.76	.77	.78	.....	.70	.....	.70	.70	.70	.....
19-19.9	.82	.79	.82	.87	.84	.81	.....	.....	.85	.76	.78	.77	.78	.....	.70	$.70	.74	.74	.71	$.70
20-20.9	.85	.79	.85	.90	.88	.84	.....	.....	.88	.78	.82	.77	.80	.....	.....	.70	.78	.78	.72	.70
21-21.9	.88	.79	.89	.93	.93	.88	.....	.....	.91	.80	.85	.77	.84	$.78	.....	.73	.82	.82	.74	.70
22-22.9	.92	.82	.92	.96	.98	.92	.....	.....	.93	.84	.89	.79	.88	.78	.....	.77	.87	.86	.78	.72
23-23.9	.95	.86	.96	.99	1.02	.96	$.84	.....	.96	.88	.93	.82	.92	.78	.....	.80	.92	.90	.82	.76
24-24.9	.99	.91	1.00	1.02	1.06	.99	.88	.....	.99	.91	.96	.85	.96	.82	.....	.84	.97	.94	.86	.79
25-25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	.....	1.02	.95	.....	.89	.99	.86	.....	.88	1.01	.98	.90	.83
26-26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	.....	1.05	.98	.....	.92	1.03	.90	.....	.91	1.06	1.02	.....	.....
27-27.9	1.10	1.05	1.11	1.12	.....	1.10	1.03	.....	.....	1.02	.....	.96	1.06	.95	.....	.95	1.10	1.06	.....	.....
28-28.9	1.14	1.10	1.14	1.15	.....	1.14	1.07	.....	.....	1.06	.....	.99	1.10	.99	.....	.99	1.15	1.10	.....	.....
29-29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12	.....	.....	1.09	.....	1.03	1.14	1.03	.....	1.02	1.20	1.14	.....	.....
30-30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	F.O.B.	.....	.....	.....	1.07	1.17	1.08	.....	1.06	1.25	1.18	.....	.....
31-31.9	.....	.....	.....	1.24	Line	1.24	1.22	Ship	Kettleman Hills			1.11	1.21	1.12	.....	1.09	1.29	.....	.....	.....
32-32.9	.....	.....	.....	1.27	.....	1.27	1.27	.....				1.14	1.25	1.16	.....	1.13	1.34	.....	.....	.....
33-33.9	.....	.....	.....	.....	.....	.....	1.32	$.128		1.19		1.18	1.28	1.20	.....	1.17	1.38	.....	.....	.....
34-34.9	.....	.....	.....	.....	.....	.....	1.37	1.32	.....	1.23	.....	1.22	1.32	1.25	.....	1.20	.....	.....	.....	.....
35-35.9	.....	.....	.....	.....	.....	.....	1.42	1.35	.....	1.27	.....	1.25		1.29	.....		.....	.....	.....	.....
36-36.9	.....	.....	.....	.....	.....	.....	1.46	1.39	.....	1.31	.....	1.29	.....	1.33	.....	.....	.....	.....	.....	.....
37-37.9	.....	.....	.....	.....	.....	.....	1.51	1.43	.....	1.35	.....	1.32	.....	1.37	.....	.....	.....	.....	.....	.....
38-38.9	.....	.....	.....	.....	.....	.....	1.56	.....	.....	1.39	.....	1.36	.....	1.42	.....	.....	.....	.....	.....	.....
39-39.9	.....	.....	.....	.....	.....	.....	1.61	.....	.....	1.43	.....	1.40	.....	.....	.....	.....	.....	.....	.....	.....
40-40.9	.....	.....	.....	.....	.....	.....	1.66	.....	.....	.....	.....	1.43	.....	.....	.....	.....	.....	.....	.....	.....

WORLD DEVELOPMENTS and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Petromex to Buy

GOVERNMENT COMPANY TO SPEND 6,700,000 PESOS

Petromex, the semi-official oil company of Mexico, is making investments this year of 6,700,000 pesos (about $1,885,000) in various exploitation and exploration works, announces Engineer Pascual Ortiz Rubio, ex-president of Mexico, who heads the company. Details of this investment are (amounts in pesos):

Geological and geophysical explorations, 350,000; acquisition of concessions, 100,000; drilling wells and exploitation equipment, 1,900,000; pipe line between Tuxpan, Vera Cruz state, and Tampico, 1,750,000; tugs and other vessels, 250,000; cracking plant at Tampico, 1,440,000; asphalt plant, 160,000; two storage depots in Mexico City, one at a cost of 200,000, the other at a cost of 50,000; and filling stations in Mexico City, 50,000.

Petromex's greatest well is Petromex 5. Lot 31 of the Poza Rica field, Vera Cruz state. It began production in June with 5000 barrels daily at 7430 feet, and is now yielding 3000 barrels a day. Production is limited to that amount, it is explained, because of the great amount of gas the well contains. "Experience of the Mexican Eagle Oil Company (Royal Dutch Shell unit) with its wells demonstrates that it is necessary to increase production slowly to prevent harming the deposit and the well," the statement says.

Drilling this well cost 745,000 pesos (some $210,000), but added to that outlay was the expense of four kilometers of discharge tubing, high and low pressure separators, storage tanks, a pump station, and other installations that cost 255,000 pesos ($81,000).

Petromex 4 is being drilled in the federal zone of the Las Choapas Brook, Vera Cruz. This is one of 10 wells that Petromex has contracted for drilling in the Isthmus of Tehuantepec region, Vera Cruz. Six wells have been drilled on a royalty basis in federal zones on the Panuco and Tamesi rivers and on the Tuna Strait. Production of Petromex wells increased from a daily average of 1097 barrels in July, 1935, from wells given to it by the now defunct Administration of National Petroleum, to 4600 barrels at the present time. This output will be increased to 7000 barrels daily when Petromex 5 attains its full production capacity, it is claimed. Petromex's net production was 381,462 barrels from February 1, 1935, when it began practical operations, to December 31, 1935.

Petromex recently brought in Petromex 4 in El Plan zone, Minatitlan municipality, Vera Cruz state. It began production with 18 barrels daily at 2448 feet.

Mexican petroleum production registered a slight drop in September, according to estimates of the ministry of national economy placing the output for that month at 3,768,849 barrels. Production in September, 1935, was 3,442,857 barrels.

The ministry rectifies August production at 3,773,503 barrels.

MEXICO

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Mexican Eagle Oil Co., El Plan 53 El Plan Hacienda, Minitalin, Vera Cruz state	3145	3090

*Failures; †Junked; ¶Million cu. ft. gas.

RISE CONTINUES

Trinidad oil production exceeding that of 1935

Trinidad's September production of 1,246,420 imperial barrels, bringing the colony's production for the year up to 9,792,006 barrels, indicates an increase of 1,377,371 barrels for the year over total production in 1935, which amounted to 11,678,637 imperial barrels.

Figures prepared for The Oil Weekly by the mines department of Trinidad, as shown in the accompanying table, reveal the first 9 months of 1936 produced 1,293,293 barrels more than the 8,498,713 imperial barrels produced in the corresponding period of last year.

September, with a production of 1,246,420 barrels, represented the peak month of 1936 for Trinidad, with October, November and December yet to be heard from.

Production in Trinidad by months during 1935 and for the first 9 months of 1936 follows:

Trinidad Crude Oil Production
(Figures in Imperial Barrels)

	1935	1936
January	915,220	1,079,082
February	843,619	983,424
March	919,848	1,081,191
April	909,846	1,026,423
May	953,108	1,066,728
June	972,904	1,078,186
July	988,341	1,121,583
August	1,003,382	1,108,969
September	992,445	1,246,420
October	1,105,492	.....
November	1,078,957	.....
December	1,086,375	.....
Totals	11,678,637	.....
Totals, first 9 mos.	8,498,713	9,792,006

NEW OIL FINDER

Stiattesi's invention may revolutionize exploration

Considerable discussion followed publication of an item in a recent issue of THE OIL WEEKLY telling of a report in Italy that oil deposits had been discovered near Florence by use of a new radio-magnetic mineral finding apparatus invented by Professor Raffaello Stiattesi, one of the directors of the Royal Geophysical Observatory at Quarto, Florence.

Some, remembering the days when there was a pronounced tendency on the part of operators in general to put the torsion balance and seismograph in the same category with wiggle sticks and doodle bugs, are of the opinion it would be well to give serious consideration to Stiattesi's findings. Others point out that there are a hundred patented oil finding devices to every one that has found practical, commercial application.

At any rate, immediately upon publication of the item THE OIL WEEKLY sent queries for additional details on the instrument to Stiattesi and to another contact in Italy.

Stiattesi's answer, written from the observatory at Quarto and translated by Peter Aleo of Houston, reads in part as follows:

"We have discovered three petroleum beds near Florence, two near Corregi and Tergollina, and another at Castello. These were discovered with our new system (involving radio analysis) which is sensitive to radiation emitting substances. Charges caused by (sympa-

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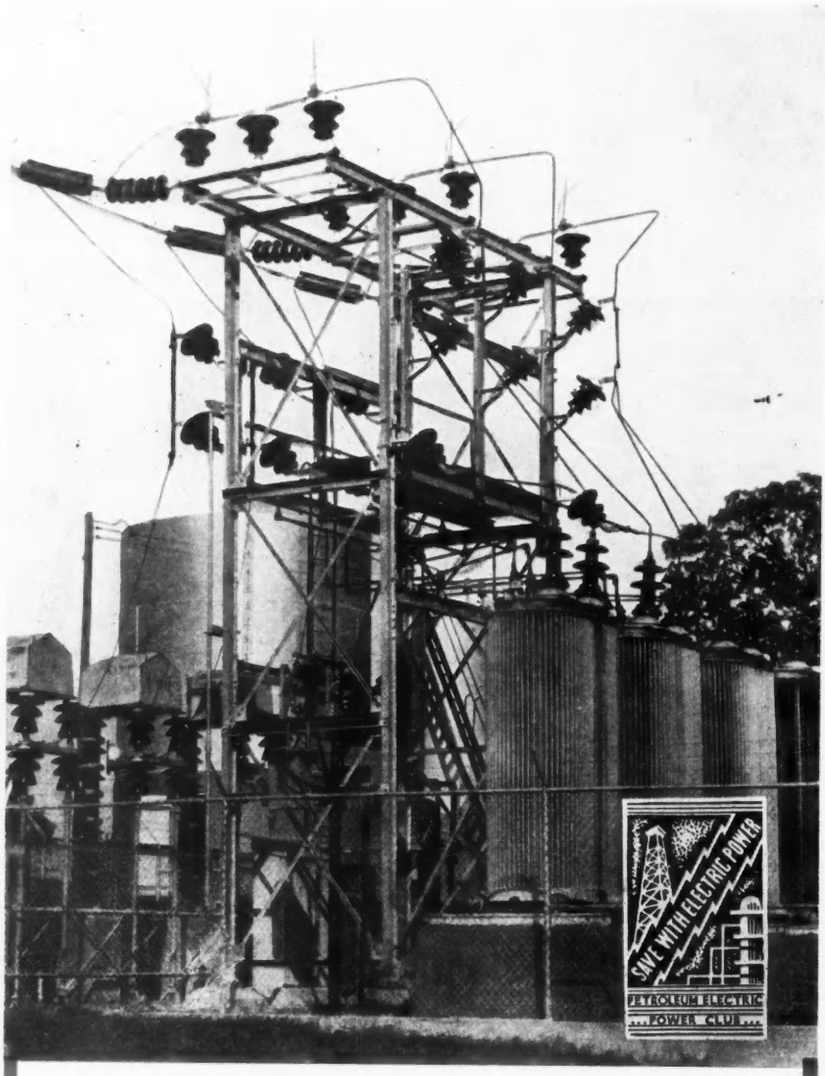

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thetic) radiation of the instrument (when interpreted) permit us to determine at what depth the radiant substance is located and the thickness and extent thereof. These three beds have proved to be not more than 350 meters in depth and to have a content of 1,253,742 cubic meters of petroleum. * * * Now we are awaiting permission of the government to start drilling for the oil. As soon as this is obtained, we shall start drilling. I and two other persons are the concessionaires of the findings."

Another letter dated October 7 and received by The Oil Weekly from a disinterested and reliable source in Florence, states in part: "Just how much credit can be placed in Professor Stiattesi's system of locating petroleum is a matter of conjecture. He is, however, a man holding a recognized position in a government institution, the Royal Geophysical Observatory at Quarto, and as such is entitled to all consideration. He claims to have invented and patented a radio magnetic apparatus which is able to locate, even at a distance of some miles, ordinary or mineral water, mineral deposits, coal and petroleum."

The professor's statement to the Italian public, issued from the observatory, contains such astounding statements as: " * * * (The instrument is able to) indicate the exact point necessary to drill to reach the substance in question" * * (The instrument will tell) "of how many strata the substance is composed, quality, quantity, thickness and extent of said substance." * * * "Rarely does a research require more than a day; ordinarily three or four hours are sufficient."

YVERDON WILDCAT

Swiss test may encounter oil at greater depth

S. A. Neuchavaud and S. A. Hydrocarbures, jointly drilling a wildcat near Yverdon in the Canton of Vaud, Switzerland, are of the opinion that chances for commercial production will be better as the test approaches a depth of 3000 meters, according to a letter from Zurich.

The Oil Weekly's contact in Zurich advises the test encountered an oil bearing formation at 330 meters and oil at 430 meters. It is not certain, however, that the Yverdon test will produce commercially at these depths.

Headquarters for the joint operators at Yverdon are in Lusanne. Both corporations represent Swiss capital. Drilling operations are supervised for them by Franz Josef Vingerhoets, reported in Swiss papers as having been successful in drilling oil wells in Texas and Mexico.

EAGLE OPPOSED

Poza Rica, Mexico's newest and richest field, October 26 was figuring in another law suit in which 12 surface owners were opposing granting of rights to Lot 51 to Mexican Eagle Oil Company, contending that such action would violate their franchise, which dates from 1908.

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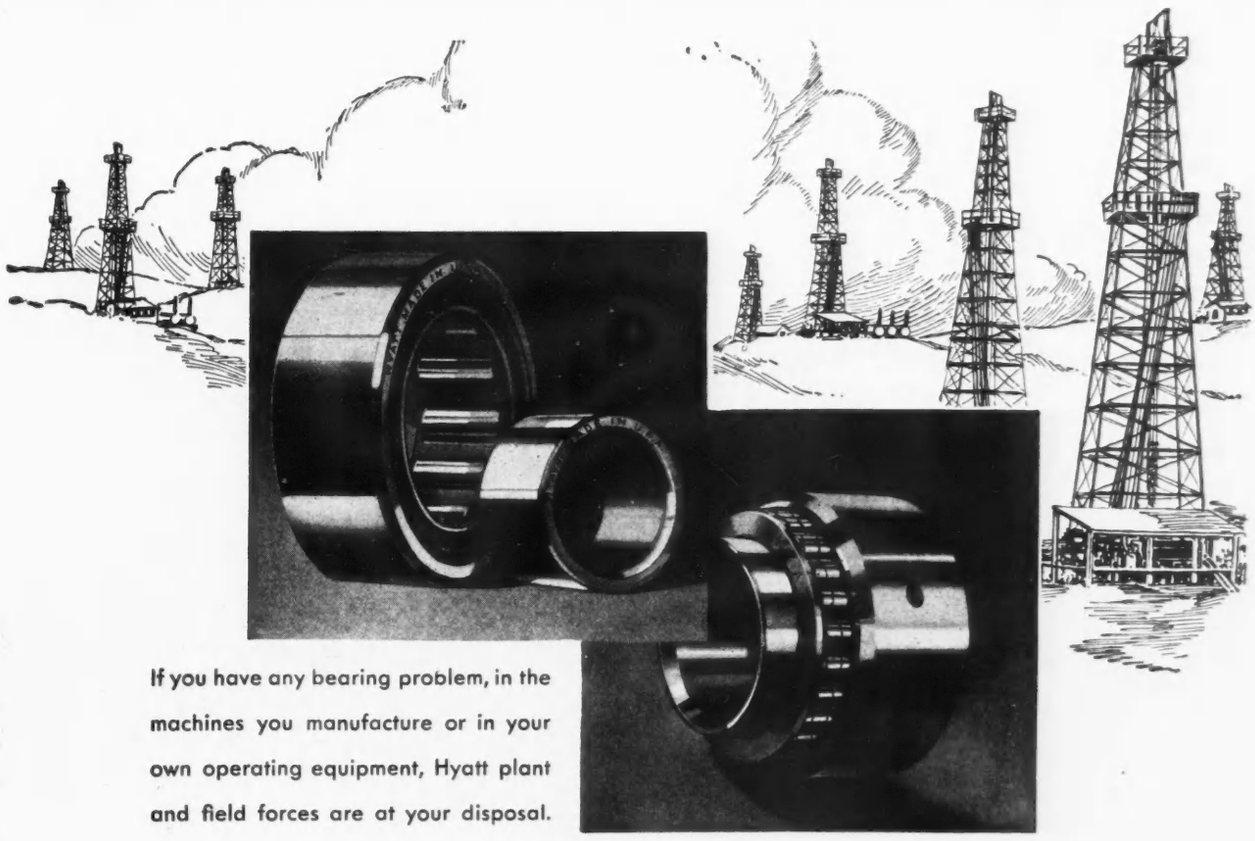

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New Colombian Law

LESS VIGOROUS REGULATIONS TO STIMULATE DEVELOPMENT

Bogata, Colombia, Nov. 5.—Impetus to further development of petroleum resources in Colombia will be felt as a result of the signing today by President Alphonso Lopez of revisions to Petroleum Law 37, the national Colombian law affecting petroleum concessions. The revisions of Petroleum Law 37 modify Articles 7, 9, 17, 18, 26, 27, 28 and 35 and addition of three new articles.

One major effect of the law is that it facilitates operations on private property by making it easier to clear title through clarification of title procedure. It also makes less rigorous the requirements in the previous law concerning submission of geological and geophysical evidence. Petroleum Law 37 required that the original title be produced as evidence, while the new law allows presentation of the equivalent, permitting proving of title by either the original, or presentation of public documents of official origin which accredit the original title. Period of time by which concessions can be extended was lengthened three years by payment of one peso per hectare for the seventh year, one and half pesos for the eighth year and two pesos for the ninth year.

The new law in no way affects the two major concessions in Colombia, the Barco concession and Tropical Oil Company's concession.

An important clause in the new law estops filing of suit by either government or concessionnaire after two years have lapsed from a decision by the supreme court in a brief and summary suit.

Encouragement to further development of Colombian petroleum resources is lent by provisions of the new law which grant substantial reduction in severance taxes on oil produced provided operations begin within 15 years of date of the new law becoming effective. The government, under the new law may collect petroleum taxes in money or oil.

A move to encourage establishment of refining facilities within the republic is found in further provisions of the new law, which exempt from a severance tax production refined for domestic consumption, while production refined in Colombia for export during the first 10 years after the establishment of the refinery receives a 20 percent reduction in severance tax. Also under the law the government exempts from import duties machinery, materials and such elements introduced into Colombia for the refining of crude oil.

Mexico Discovery

TAMAULIPAS GAS WELL STARTS PRODUCING CRUDE

Continental Oil Comany apparently has opened a new oil field, the first in northern Mexico, on its prospect, 28 miles southwest of McAllen, Texas, but in the state of Tamaulipas, Mexico. Zacate 5, which was completed as a gasser October 23, producing 10,000,000 cubic feet of gas per day, is now making considerable oil. The oil is believed to be coming from sand at 3512-22 feet. When completed, the test was made to flow from both the 3500-foot sand and a gas sand at 4072-74 feet, the upper sand showing both oil and gas. Operators now indicate the test has changed over from gas to oil and is spraying crude. Formerly it was making gas and distillate. Estimates on its production range from 50 to 150 barrels daily. Drillers are cleaning out the hole to improve the production flow.

Details concerning the earlier completion of Zacate 5 appeared in THE OIL WEEKLY of November 2.

It is on a concession in which Continental Oil Company has 278,270 acres under lease, and is so located as to provide an immediate market for gas in the city of Monterrey.

Producing from the Cockfield formation, the well encountered gas from 3512 to 4090 feet. Casing pressure initially was 520 pounds, and tubing pressure 500 pounds.

Continental's operations in Mexico are directed by a subsidiary, Consolidated Oil Companies of Mexico, which has concessions totaling 859,306 acres. Of this acreage, 276,110 are located just west of Panuco in Vera Cruz state, where the company has 42 producing oil wells, and 583,196 acres are in Nuevo Leon and Tamaulipas states, in northern Mexico.

GETS INJUNCTION

Ministry restrained from cancelling concession

Gas Natural de Mexico, S.A., backed by American interests headed by Keith Kennedy Koffroth and Loy Childers, reputed to be former Texas oil men, obtained an injunction from a local court against enforcement of the cancellation by the ministry of national economy of its concession to operate 21 wells in dry Lake Texcoco, near Mexico City, to supply natural gas to factories and homes there and in adjoining communities. The ministry contended that the company had failed to fulfill certain provisions of the franchise. The company argues that the pact still allows it time to make these fulfillments.

The ministry will appeal the case to the federal supreme court.

EXPECT INCREASE

Iran's output may reach 8,247,000 tons in 1936

Calculated on the basis of the first 8 months official production figures received from Anglo-Iranian Oil Company, Limited, production of crude oil in Iran in 1936 should exceed that of 1935 by about 788,000 tons, or 5½ million barrels.

Production of crude oil in Iran during August amounted to 731,000 tons, bringing the total for the first 8 months of 1936 up to 5,498,000 tons, which may be compared with 4,928,000 tons produced in the corresponding period of 1935 to show an achieved increase of 570,000 tons already.

Iran's production in 1935 totaled 7,459,000 tons. Production in 1936 probably will exceed 8,247,000 tons.

Production figures for the first 8 months of 1935 and 1936 are shown in the following table:

CRUDE OIL PRODUCTION IN IRAN
(Figures in tons.)

	1936	1935
January	661,000	630,000
February	640,000	587,000
March	663,000	697,000
April	616,000	584,000
May	768,000	561,000
June	723,000	600,000
July	696,000	607,000
August	731,000	662,000
Total first 8 months	5,498,000	4,928,000

GOVERNMENT AID

Wildcatters may get leases in Flathead Valley

Members of British Columbia's provincial government recently indicated the possibility of the government in the near future doing something in a practical way towards aiding the search for oil in Flathead Valley.

According to Wells Gray, minister of lands, since a start was made in drilling for oil or gas in the Flathead Valley the British Columbia government has placed a reserve on thousands of acres of land in the immediate vicinity. If oil should be found in this area as the result of the present drilling by private capital the people of the province would thus stand to benefit from the demand that would follow for the petroleum rights in the area held in reserve by the government. It was as a result of this situation that Gray felt private interests who had spent large sums of money already in development should have

WORLD'S LONGEST STRING OF *Oil Well Tubing* ... set with NIXON TRUE-TAPER SLIP *and* SPIDER

Unretouched photo of Nixon True-Taper Slips used on this job.

Almost 10,000 feet of 2½" External Upset Tubing, weighing approximately 66,000 pounds, were successfully run in Harrison & Abercrombie's No. 1 Armstrong Fee at Old Ocean, Brazoria County, Texas.

THIS is believed to be the longest string of tubing ever run in a well with only one tubing slip and spider. It was handled without difficulty by the Nixon True-Taper Tubing Slip and Spider. Slips gripped the tubing instantly, held without the slightest tendency to slip and released instantly when pipe was picked up.

This remarkable performance was due to the TRUE-TAPER construction. The flat backs of the slip segments were always in perfect contact with the correspondingly tapered surfaces of the spider. The teeth were always parallel with the pipe assuring a full-length grip, eliminating possibility of biting or injuring pipe.

There are twenty-one outstanding reasons why Nixon True-Taper Tubing Slips and Spider establish such new performance standards as this. Write for this descriptive bulletin.

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Barbers Hill, Kilgore, Greta, Gladewater, Bay City, Victoria, Pierce, Talco and Corpus Christi, Texas; Lake Charles, New Iberia and Rodessa, La.

some degree of first claim on the reserved lands. This same procedure has been followed by the government in other sections of the province where oil was being sought.

Frank McPherson, minister of public highways, while not committing himself to any promise, left the impression with cabinet members of the party which visited the Flatheads that by another year possibly a start might be made in having a road built from the Canadian side into this area. Transportation is one of the major problems of development of this area, the only way of access being from the Blackfeet forest reserve area on the American side. This road runs due north from Columbia Falls nearly 100 miles to the valley, and is not open in the winter. On the Canadian side the distance from Fernie as the crow flies is about 40 miles.

Four companies financially interested in the territory are Amalgamated Oils, which holds petroleum rights over about 12,000 acres of the valley; Crow's Nest Oils, Ltd.; Columbia Oils, Ltd.; and the London Pacific Exploration Company, Ltd., which holds about 6000 acres.

Columbia Oils Ltd.'s test is down just short of 5000 feet. The hole is straight, and several indications of gas and oil have been reported. Drilling for some time past has been through very hard rock.

Shallow Revival

DRILLING HAS INCREASED IN NORTH MID-CONTINENT AREA

DURING the past 18 months the shallow production area of northeast Oklahoma and southeast Kansas has witnessed a steadily increasing activity. Only a small portion of the present development is directly due to water-flooded projects, either active or proposed, the general advance being attributable to the trend toward greater stability of the industry. Failure of Mid-Continent wildcats to open new areas of large production qualities that might materially affect the balance of supply in the sector is another factor of contributing importance.

An estimated 308 drilling machines are active in Nowata, Rogers, Washington, Craig, eastern Osage, northeast Creek and Tulsa counties Oklahoma, and in Chautauqua, Montgomery, Labette, Wilson, Neosho, Allen, Anderson, Franklin, Miami and extreme southeast Woodson counties, Kansas. In addition to the above operations, operators engaged in or preparing to water flood have some 40 machines drilling and testing in both states. Production in both areas is slightly above that of a year ago, not including water-flood production which is irrelative to the comparison.

The major portion of the runs from the area is Bartlesville sand production in Oklahoma, and the Bartlesville and Squirrel sands of Kansas. Practically all production is coming from sand strata and siliceous limes of sandular lensing, and in addition to the horizons mentioned above, the Big Lime, Prue sand, Oswego lime, Skinner sand, Dutcher sand, Burgess lime, Red Fork and Oswego strata may carry either oil or gas or both. These various formations are not of occurrence over the entire area, and even where found production is not general. In a general sense the region consists of shore line sedimentation, productive in highs and shoestrings. Elevation varies from 400 feet to an approximate high of 800 feet.

Formations present and tested at locations throughout the sector are the Mississippian, which is largely represented by the Boone series, the Pennsylvanian, which bottoms with the Burgess sand, and the Ordivician, the upper portion of which is missing. A number of tests have been drilled through the Arbuckle limestone to granite and the assumption is general that this junction is of extensive and direct, but of unconformative, occurrence. Due to successive lifting and submersion the major strata of the area are found in unconformative relationship. All formations lift to the east both in Oklahoma and Kansas at an average dip of 32 feet to the mile, this figure decreasing to less than half in northeast Kansas. This latter fact accounts for surface outcrops in the extreme eastern sections of both states that are productive at depths of 500 feet in more western locations.

Depths at which production may be found throughout the region varies from a few feet to 1500 feet in the Tulsa sector and immediately south. Gas production is widespread, although of slight value in comparison with oil. True anticlines have been mapped in the region, some of which have been proved for production. Others have not been tested. Most of the shallow Kansas production is of the shoestring type with only rare findings in minor anticlines or on the gradual flanks of reverse dips.

As the Oklahoma shallow area was first drilled and produced in 1904 and regularly expanded since that date, the pressure existing in the major productive members of the various strata is far less than the original pressure. The same is true of Kansas where first exploration predated Oklahoma develop-

Rental Income

GOVERNMENT DERIVES HALF MILLION DOLLARS IN YEAR

Washington, D. C.—An income of $654,129.58 from lease rentals and royalties on oil, gas and gasoline, to which was added $441.92 from rentals for grazing rights, was derived by the government during the fiscal year ended June 30, last, from the Naval petroleum reserves, it was disclosed November 7 by Secretary of the Navy Claude A. Swanson in his annual report to the President.

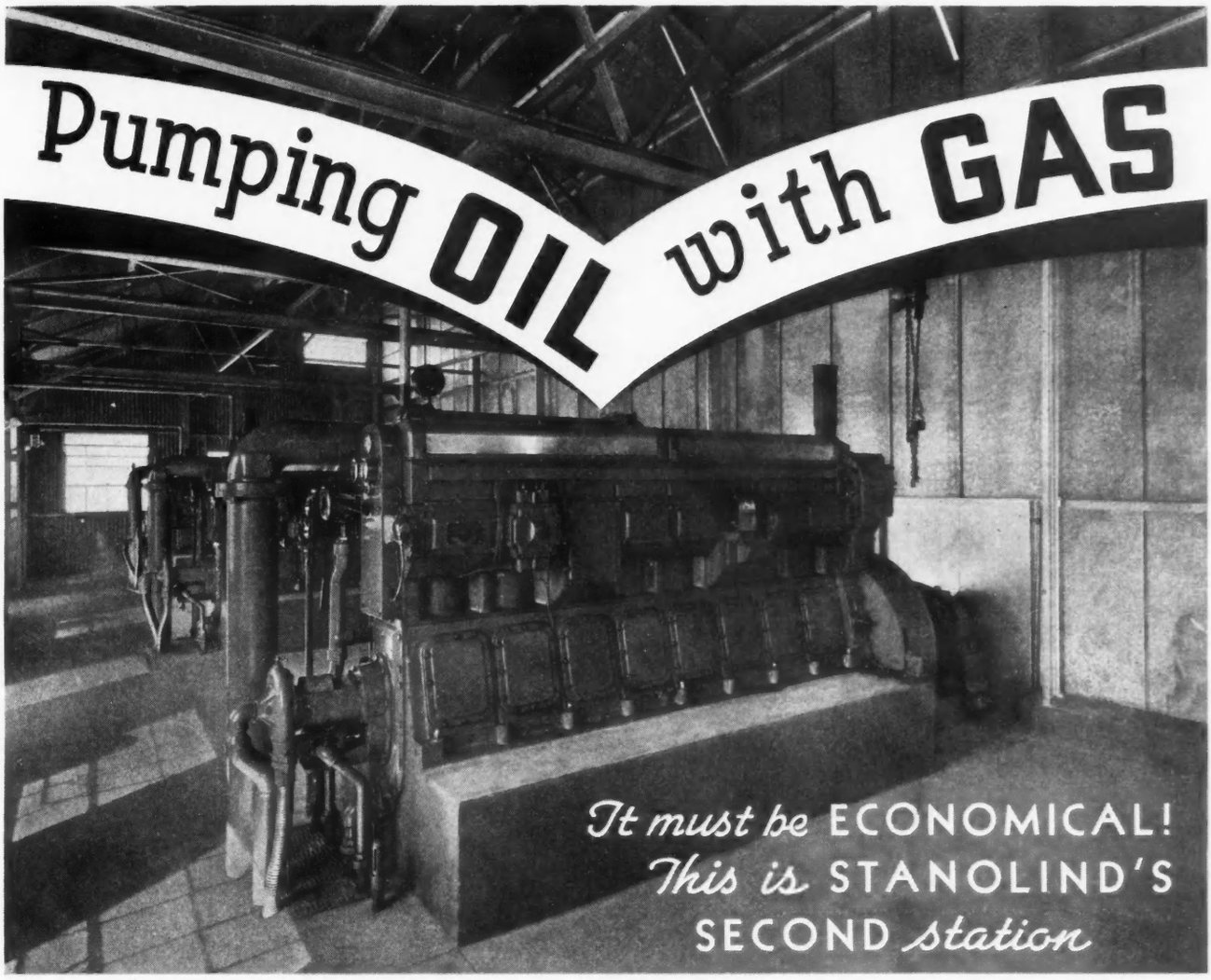
During the year, the secretary revealed, the Department of Justice continued its preparation of its cases in three causes of action involving these reserves.

The most important of these cases, he said, is the Section 36 case, in which the Secretary of the Interior in a decision rendered on January 24, 1935, determined that title to Section 36-30s-23e, Mount Diablo meridian, a section of land in Naval petroleum reserve No. 1, has remained in the United States and has never been vested in the state of California or its transferees.

In this action special assistants to the Attorney General were appointed by the President to prepare the government's case to dispossess the claimants (Standard Oil Company of California, Frank J. Carman, Mrs. Sidney H. Greeley, et al) to Section 36 and to recover the value of the oil and gas produced from the section during the period it has been in their possession. It is estimated that the principal sum involved in this action will be approximately $12,800,000 which, if augmented by interest figured at seven percent on monthly balances, will aggregate in excess of $23,600,000 to January 1, last, with interest charges thereafter accruing at a rate of approximately $898,000 a year.

The government's special counsel in this case have also been charged with the preparation of the government's claim to title of Section 16-30-23, Mount Diablo meridian, a case similar to the Section 36 case, wherein claimants likewise hold title as transferees of the state of California. In the Section 16 case hearings were held and testimony taken in Los Angeles in March and April, 1936.

The third case concerns an action filed by the government's special counsel in the United States District Court for the Southern District of California, entitled "United States of America v. E. L. Doheny." In this action the government seeks to recover the sum of $5,188,721.77, with interest at the rate of seven percent per annum from and after May 14, 1935, from the estate of the late Edward L. Doheny.



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FEATURES OF COOPER-BESSEMER TYPE-EN VERTICAL GAS ENGINES:

CONVENIENT: Compact and light. Inexpensive to install on minimum foundations, in a small building. Simple to operate and to service. Available in 3, 4, 6, and 8-cylinder sizes.

RELIABLE: Built with the brute strength needed for 24-hour service. Have rugged Diesel-type construction throughout. Example — the large-diameter crankshaft and the big crank web that eliminate all dangerous criticals.

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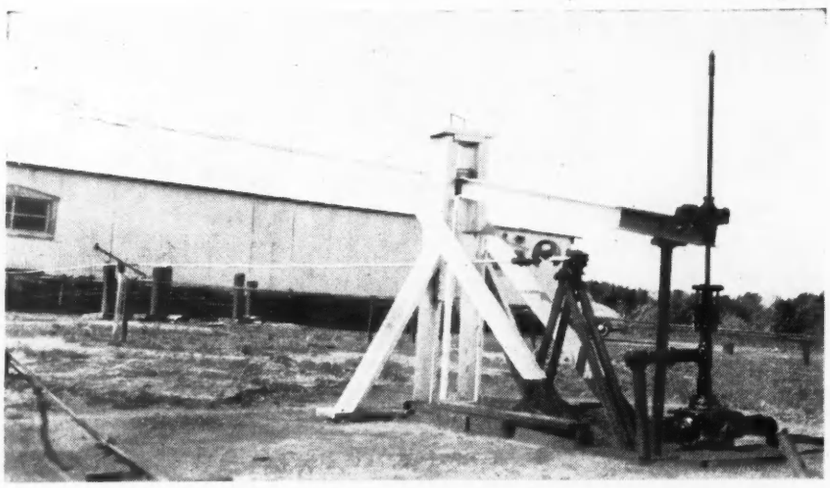


Pump jack in shallow production area. The lower line, to the right of the well head, carries casing gas, while crude is pumped through tubing and to receiving tank. Lease power house at left rear.

ment. Virgin pressure is still in existence in lensing sands or where the porosity varies sufficiently to form a barrier to migration. This fact, and because of the thickness of heavily saturated horizons at comparatively shallow depths, has been responsible for the widespread use of secondary recovery methods.

Aside from any type of repressuring project, present activity is being directed toward the extension of known production areas, rather than the finding of new production. This holds true for each state. The accepted assurance of at least a small producer has governed this limitation and has materially aided in sustaining total production figures even although production per acre has been gradually declining. In a number of sections old wells have been drilled deeper within a pay zone, or into another formation. Cleanout operations and more modern equipment installations are numerous.

This area has for a long time been the haven of those with little capital but wishing to get into the oil game. A number of industrially prominent men received their start in the sector. Small interests and individuals continue to control considerable acreage here, more particularly in Kansas than in Oklahoma. Most of the present drilling is being done by private contractors or small organizations.

Equipment in use is as highly varied as possible. However, in spite of varied fabrication of equipment, drillers have marked up some remarkable drilling records. Total time required to drill to a depth of 500 feet is seldom more than six days with four and one half days more nearly in line with a true average.

Two or three joints of 10 or 12-inch casing are set as surface pipe, and the hole drilled on down with either an eight-inch bit in the deeper areas or a six-inch in the more shallow sections. In some locations operators complete the last two hundred feet of hole with four inch. Many wells are completed with one string of casing and others with none at all. Production is through tubing ordinarily by pumping.

Present contract price varies with the proposed depth, being around $1.55 per foot to 1500 feet in the Tulsa area and gradually decreasing to 75 cents per foot in shallow areas of eastern Kansas. In the Nowata-Rogers sector, one of the most active, contract price is from 90 cents to $1.15. In Linn, Franklin and Miami counties, Kansas, the drilling contractors obtain a wide spread, from 75 cents to $1.50 per foot of hole.

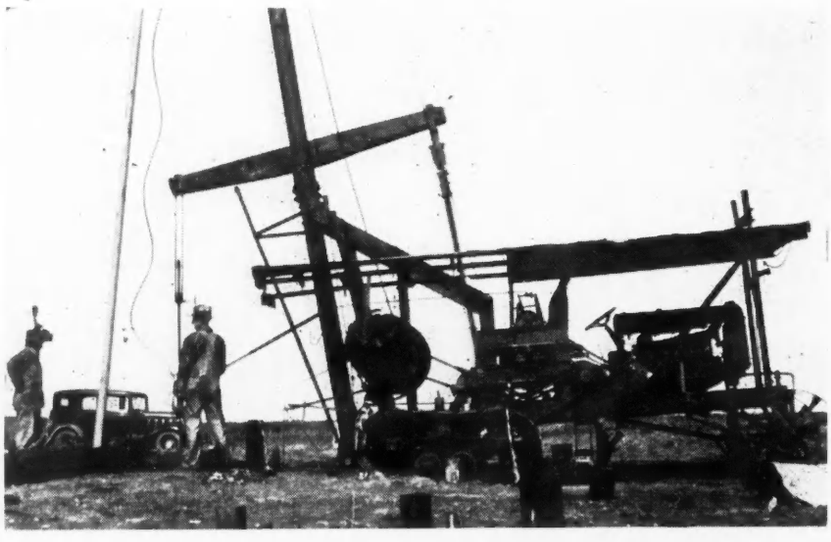
The use of auto engines is becoming more pronounced as power equipment in both states. These may be adapted for either gasoline or natural gas as fuel. An added advantage to the use of such powered equipment is that it is more easily moved from one location to another than heavier machinery. Drilling machines are of the portable and semi-portable type.

In many sections it is necessary, due to equipment and lack of a supply of natural gas, coal is being used as fuel. Cost of coal delivered to the location is averaging $4.00 per ton, 12 to 15 tons being required to complete a 650 foot hole. A motorized unit requires in the neighborhood of 50 gallons of gasoline per 24 hours of operation.

Although the practice is not strictly followed in all areas, it is customary to employ three drilling crews working eight-hour shifts. Crews consist of two or three men as occasion demands. Wages have been generally advanced to a more substantial level than was prevalent four years ago.

There are two possible results of the present situation. One is that with discarding of a portion of present operative equipment, the contract price per foot may be increased. A second probability is that major operators may include shallow drilling machines in their equipment and drill their own wells. There is a noticeable tendency toward the latter at this time. Either of these possible outcomes would be detrimental to more widespread exploration of the area which has reached its present state of importance largely through the efforts of the independent operator and contractor.

If the present delicate balance between supply and demand in the Mid-Continent is maintained or strengthened it is apparent that the revival of activity now under way will continue to increase. Widespread core testing may open new shallow pay areas of less magnitude than those already outlined. It is improbable that extensive pools will be found because of the thoroughness of previous exploration. Virgin territory exists along the edge of present shallow production, especially the eastern flank. The Arbuckle lime has not received the attention expected. Development on domes known to exist may prove this horizon for production. In Kansas, where possibilities of locating more shoestring pools are greater than in northeast Oklahoma, the "Big Lime"



Cleaning out a shallow well after being shot. Average charge for sand formation wells is 1 quart per foot of hole within the sand. This type of drilling machine is extensively used through the northeast Oklahoma, southeast and east Kansas areas where production is found above 1500 feet.

Among Oil Men at the Chicago API Meeting

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A. E. BRADSHAW
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C. H. SWEET
Vice President

THREE EXECUTIVES of the NATIONAL BANK OF TULSA will be at the API Convention in Chicago, November 9-12, to meet their many friends and to discuss with them ways and means by which their bank can contribute to the oil industry's development.

These men, like most of the officers and the members of the board of the NATIONAL BANK OF TULSA, are well founded in their knowledge of oil production and financing, and they speak the oil man's language.

The policy of the bank is—"Let's go out and look the proposition over," and, as a result, the officers know how to make sound oil loans that are to the best interest of both parties.

NATIONAL BANK OF TULSA

The Oil Bank of America

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has received scant consideration. In the few wells drilled into this horizon, numerous shows have been found in breaks of general occurrence.

In Kansas, Montgomery, Chautauqua, Allen, Anderson, Neosho and western Labette counties are receiving most of the play at present. A number of independent operators are drilling gas wells in Miami, Franklin and Bourbon counties. A small drilling campaign is under way north of Louisburg, Miami County, for gas.

The Nowata-Rogers sector is receiving the most attention from Oklahoma operators at this time, both from the standpoint of water flood tests and from efforts to extend known areas for marginal production. Rogers County has seen new minor production opened, as well as Craig County. Continuous search is being made in the vicinity of Tulsa to locate new Red Fork and Dutcher sand lenses.

The volume of recoverable oil in this range is far greater than the per well production would indicate. Secondary methods require a greater time factor than is considered in deeper and more prolific pools and decrease profit, prolonging economic life of the areas and consequently decreasing acre-month production volume. In considering ultimate recovery, three pools of Nowata County closely related but delimited through non-productive wells cover a total area of 96,000 acres. Sand thickness averages 34 feet and has high remaining saturation. Tests indicate that these three pools may ultimately produce more crude than any other existing field in Oklahoma with the exception of Fitts pool in Pontotoc County.

51 SOONER STARTS

Tulsa.—Oklahoma operators completed 52 wells for the past week, 36 being oil producers with an initial total of 85,840 barrels. Fourteen starts entered the failure column and one location was abandoned. One well was completed for an open flow of 5,000,000 cubic feet of gas.

The state had 51 new locations for the same period. Okfuskee County led the list with 10 starts, followed by Pontotoc County with 8 and Osage County with 6. Four reports were filed for Oklahoma County, 3 for Stephens and Logan counties, and 2 each for Carter, Creek, Greer, Hughes and Lincoln counties. Caddo, Cleveland, Comanche, Pawnee, Pittsburg, Seminole and Tulsa counties reported 1 new location each.

TURNER VALLEY TESTS

Brown sands penetrated by Foundation Royalties, located south of Turner Valley Royalties, the field's large producer, were thoroughly saturated with crude oil and oil was coming up through the rotary drilling fluid, it was reported recently. The brown sands were contacted at 5800 feet and drilling was proceeding at 5844 feet early in October. The limestone is expected at 6000 feet.

Sovereign Royalties, just south of Turner Valley Royalties, was reported drilling at a depth of 5764 feet. The limestone is expected to be contacted in another 60 feet.

Fitts Extension

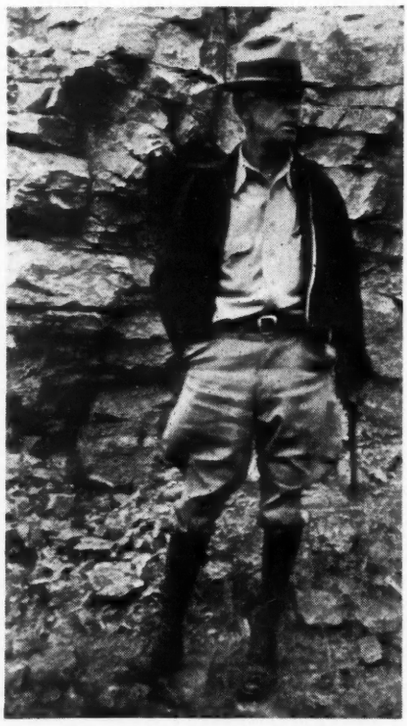
FIELD ALSO GETS ITS BEST HUNTON LIME PRODUCER

WEEKLY STAFF REPORT

Tulsa.—Upholding the usual standard of better than average production, the Fitts field of Pontotoc County came through with its quota of completions for the past week. An extension of the northeast sector of the field and the completion of the biggest Hunton lime well in the field so far were feature activities.

The extension well was Blackstock Oil Company's Kirby 1, SW NE SE 22-2n-7e, which was given a potential of 632 barrels of oil in 24 hours, production coming from 4381 feet in the Bromide lime. Top of the Bromide was found at 4380 feet.

The biggest Hunton lime well so far completed in the field was E. H. Moore, Inc., et al's Moody 2-A, NEc NW 26-2n-7e. The well topped the Hunton lime at 3428 feet and drilled to 3478 feet where 7-inch casing was set. Following the drilling of plugs, the well flowed 10 minutes into pits and tanked 367 barrels of oil in one hour with drill pipe in the hole. It was reported drilling ahead below 3621 feet.



John Fitts, after whom Fitts pool, Pontotoc County, Oklahoma was named. Fitts was active in the area prior to the major discovery and his influence was largely responsible for the development of the area.

Fleetborn Drilling Company's Wooley 5-A, NEc SE 28-2n-7e, topped the Hunton lime at 3210 feet and drilled to 3516 feet. Two-and-one-half-inch tubing was set at 3200 feet, and the well was acidized with 6000 gallons. The well then flowed 192 barrels of oil the first hour, 147 barrels the second hour, 309 barrels the third, and 97 barrels the fourth hour, with an estimated 3,000,000 cubic feet of gas.

Simpson-Fell's Westheimer 2-A, SW NW NW 26-2n-7e, was given a one-hour potential of 237 barrels of oil through tubing after acidization with 10,000 gallons. It had an estimated 2,225,000 cubic feet of gas. Production was coming from 3723 feet in the Hunton lime which was topped at 3346 feet.

Carter Oil Company's Richards 20, SE SW SE 30-2n-7e, was given a 24-hour potential gauge of 3969 barrels of oil. It is producing from the Wilcox sand, topped at 4410 feet. Depth was 4389 feet.

Magnolia Petroleum Company made location for a new test in the field. It is Morin 1, SE NE SE 20-2n-7e. It is an offset to Fleetborn Drilling Company's Morin 5, a recent completion there.

The same company was acidizing Metropolitan Life Insurance Company 25, NE NW SW 27-2n-7e. The Hunton lime was topped at 3227 feet and the well drilled to 3541 feet where 5000 gallons of acid was run into the hole. The well flowed 337 barrels of oil the first hour through casing and was then shut in to take potential.

Some trouble was encountered at E. H. Moore et al's Schauers 14, NE NW NW 29-2n-7e. The well topped the Hunton lime at 3560 feet; the Sylvan shale at 3830 feet, and set a packer at 3814 feet. When opened for 30 minutes, the well had a recovery of 30 feet of mud with a show of oil. The Viola lime was topped at 3960 feet and drilled to 4010 feet where operators were preparing to run pipe.

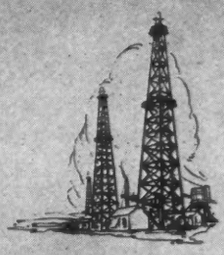
Two Jesse Locations

The Jesse townsite pool, in Pontotoc County, received two new locations during the week. Continental Oil Company made location for Helm 1, NW

HAYSTELLITE *drills more hole per Bit*

Wherever wells are being drilled, the outstanding drilling records are being made with bits set with Haystellite Inserts and hard-faced with Haystellite Composite Rod. No matter where you drill, or what formations you encounter, you can always depend on Haystellite for extra long bit life. The drilling records cited here are typical of the outstanding performances of Haystellited bits the world around.

Write today for the 36-page booklet "Haynes Stellite Products in the Oil Fields," which tells how to apply Haystellite to obtain the greatest footage per bit and uniform, dependable bit performance. Your request will not obligate you.



TYPICAL RECORDS

IN EAST TEXAS. A Haystellited bit drilled 2439 ft. of hole. A second Haystellited bit completed the hole at 3514 ft. and was still in good condition.

Another Haystellited bit was out-to-gauge and well fingered after drilling 2382 ft. of hole!

AT CONROE, TEXAS. A Haystellited bit drilled from 1324 ft. to 4037 ft., or a total of 2713 ft. of hole.

Another Haystellited bit was less than 1/16 in. out-of-gauge after drilling 1017 ft. of boulders, shale, and hard lime.

IN GREGG COUNTY, TEXAS. One Haystellited bit made 2400 ft. of out-to-gauge hole. Nearby another Haystellited bit drilled 2500 ft. Both holes were straight and no reaming was required.

AT TOMBALL FIELD, TEXAS. One Haystellited bit made 3009 ft. in 60 hours—50 ft. per hour.

Another Haystellited bit made 3686 ft. of straight and out-to-gauge hole in 62.5 hours—59 feet per hour.

AT HACKBERRY, LA. The first Haystellited bit drilled to 2180 ft.—and a second Haystellited bit completed the well at 3700 ft.

AT CADDO PARISH, LA. A Haystellited bit made 535 ft. through shale and boulders.

AT SLIGO FIELD, LA. A Haystellited bit made 612 ft. through rock formation.

AT KETTLEMAN HILLS, CALIF. A Haystellited bit made 1160 ft. of out-to-gauge hole through sandy shale!

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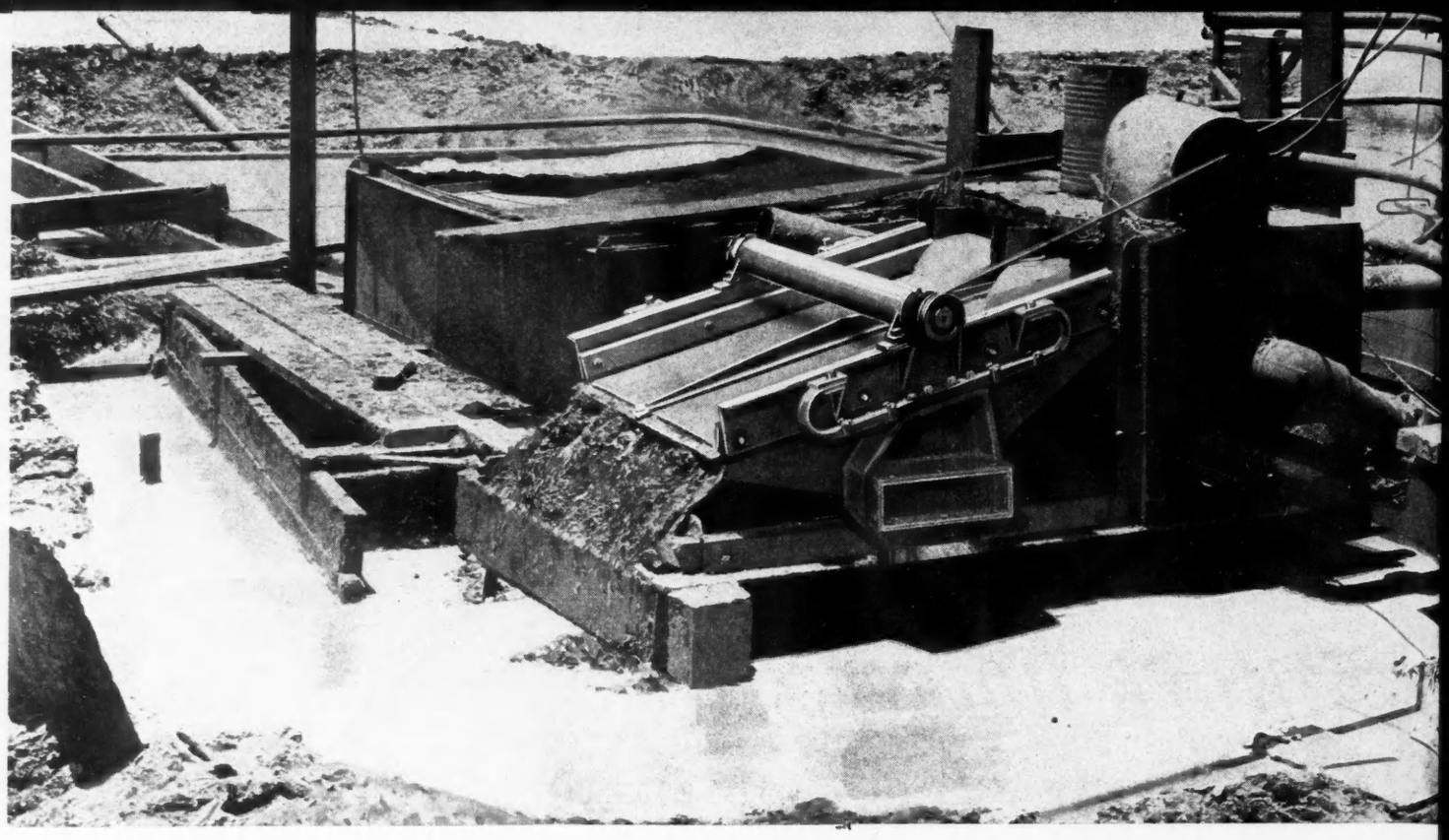

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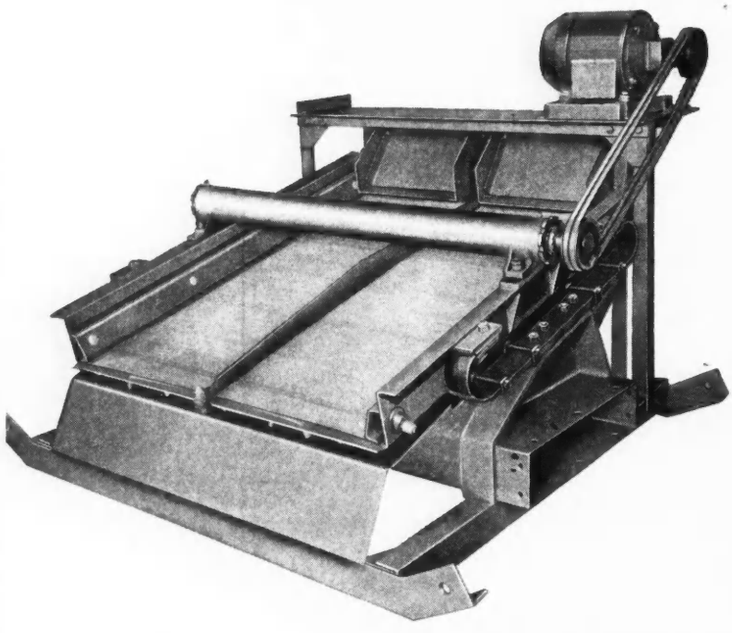
is taking slush "junk" from a $20,000 Investment in COMMERCIAL MUD and CHEMICALS



● This major operator, drilling a Gulf Coast field where blowouts have taken a heavy toll, invested more than $20,000 in commercial muds and chemicals to offset hazardous gas pressure. To keep this costly drilling fluid in the best possible condition, ridding it of damaging shale, sand and rock cuttings, they installed this **LINK-BELT VIBRATING SCREEN** which has given excellent performance throughout the job, handling the total volume of a 15 x 7¾ x 20 slush pump equipped with 7¾" liners, despite the fact the mud weight ranged from 15.8 lbs. per gallon up, at 100 to 125 viscosity.

Details of this job, one of the hardest tests to which a vibrating screen was ever put, are available upon request. Send for Folder No. 1672. Address Link-Belt Company, Philadelphia, Los Angeles, Indianapolis, New York, Dallas, Houston or Oklahoma City (W. H. Abele, Box 305, Rt. 4).

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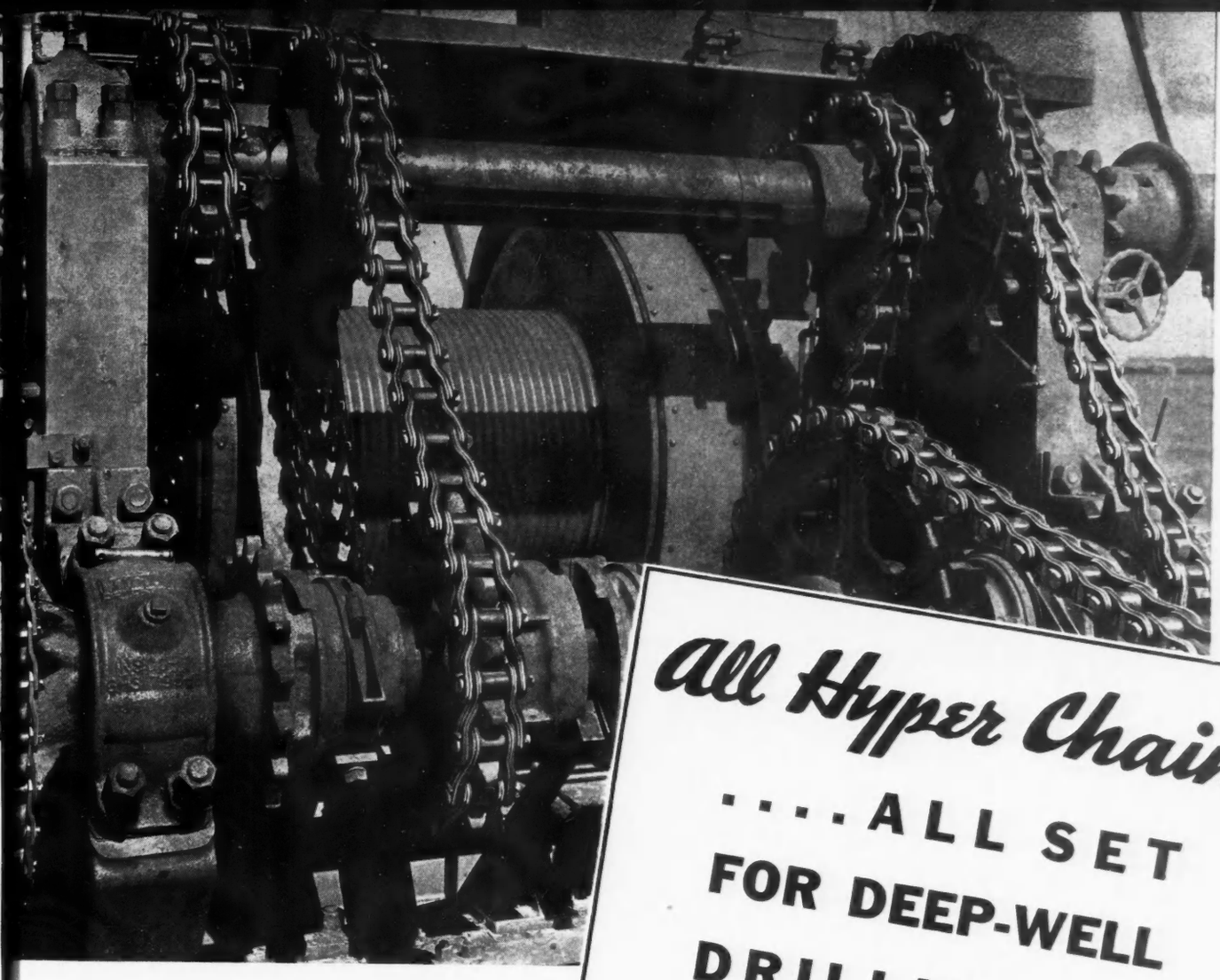
LINK-BELT VIBRATING SCREEN



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....ALL SET FOR DEEP-WELL DRILLING AT GRETA

● The above scene was caught just before the chain guards went on this rig at its Greta, South Texas location. We present it as a first-class rotary chain "hook-up" for the modern unit-type draw-works.

A few days later this operator was well on his way to the 5800 ft. "pay." Many locations" later, this same Link-Belt Hyper chain will be in the same excellent condition in which you see it here. It is all SS-124, 4″ pitch, 3-bar Hyper, except the rotary table drive, which is SS-40, 3″ pitch, 3-bar Hyper. It is all Hyper . . . that's all the crew wants to know.

This contractor, like hundreds of others, knows he can depend on Link-Belt chain—knows that there is a type to fit his drilling problem regardless of depth or formation. Address Link-Belt Company, Indianapolis, Philadelphia, Los Angeles, New York, Houston, Dallas, or Oklahoma City (W. H. Abele, Box 305, Route 4.)

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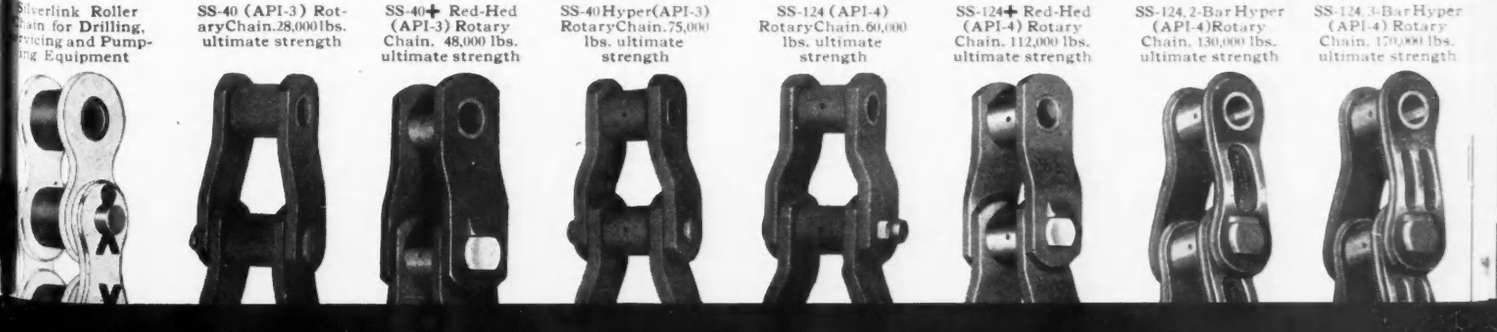
LINK-BELT
ROTARY CHAINS



Silverlink Roller Chain for Drilling, Servicing and Pumping Equipment

SS-40 (API-3) RotaryChain.28,000lbs. ultimate strength

SS-40+ Red-Hed (API-3) Rotary Chain. 48,000 lbs. ultimate strength

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SS-124, 2-Bar Hyper (API-4)Rotary Chain. 130,000 lbs. ultimate strength

SS-124, 3-Bar Hyper (API-4) Rotary Chain. 170,000 lbs. ultimate strength

SE SE 2-1n-7e, near the new producer of Mid-Continent Petroleum Corporation, the Statler 1. The other well by Continental is Helm 2, NW SW SE 2-1n-7e.

Latest producer for the area is Sunray Oil Company's Fox-Community 1, SW NE SE 2-1n-7e, which produced from the Viola lime at 4295 feet. The well flowed 385 barrels of oil through tubing set at 4200 feet. The gauge was taken after acidization with 10,000 gallons. It later made 431 barrels of oil in 24 hours, and operators report the well may be drilled deeper.

W. A. Delaney et al's Sawyer 1, SW SE NW 7-1n-8e, which lately extended the Jesse pool into Coal County, set 2½-inch tubing at 4460 feet and flowed 280 barrels of oil in 24 hours. Operators were to take a potential test and then deepen the well.

Mid-Continent Petroleum Corporation's Statler 1, SEc SW 2-1n-7e, when first opened nearly 10 days ago, made 155 barrels of oil the first hour, 150 barrels the second hour, 132½ barrels the third hour, and flowed a total of 687 barrels of oil in 5 hours, with nearly 10,000,000 cubic feet of gas. The well made good flows during the remainder of the week, and on November 5, after drilling ahead to 4559 feet, flowed 1340 barrels of oil during the last 19 hours opened.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Yahola 1, NE NW NW 36-10n-7e, northwest of Bethel in Seminole County, had Cromwell sand from 3620 to 3638 feet. Nine-inch casing was run to 3617 feet, and when tested the well flowed 35 barrels of oil the first 24 hours with 25,000,000 cubic feet of gas; 98 barrels of oil the second day with 22,000,000 cubic feet of gas; 128 barrels the third day with 29,000,000 cubic feet of gas, and 158 barrels of oil the fourth day with 35,000,000 cubic feet of gas.

Skelly Oil Company's Sporn 1, NW NE SW 21-17n-3e, south of Perkins in Lincoln County, was still fishing for the packer at 4651½ feet.

Curtis Oil Company's Quinlan 1, SWc SE 20-18n-9e, south of Mannford in Creek County, topped the Dutcher sand at 2885 feet and drilled to 2890 feet. Production for 24 hours ending November 1 was placed at 275 barrels of oil. Another 24-hour gauge was impossible, but later in the week the well was reported making about 10 barrels of oil per hour.

Fleetborn Oil Company et al's Tanner 1, NWc SE 28-17n-5e, south of Cushing in Lincoln County, was reported as having topped the Layton sand at 2284 feet, and after coring from 2287 to 2300 feet, recovered 5 feet of sand with an odor of gas. It was drilling ahead below 2325 feet in shale.

Shell Petroleum Corporation's Hill 4-A, C NW 30-3n-10e, in the Chile's Dome area of Coal County, drilled to 4224 feet and cored from 4217 to 4224 feet. The recovered core showed a stain of oil, and bore sand and shale. Operators took a drill stem test and found 65 feet of mud. It was being cored ahead.

Carter Oil Company's Warne 1, NEc NW 31-3n-9e, in the Centrahoma area of Coal County, was drilling ahead at 4525 feet in Caney shale. Continental Oil Company's King 1, NE SW NE 26-1n-8e, was drilling at 4833 feet in Viola lime.

Saturated Core

STEVENS COUNTY SHOW CAUSES MUCH LEASING

Ardmore.—Southern Oklahoma again took a back seat. Even so, activity in Stephens County was receiving some attention, with much leasing under way, occasioned by the finding of a saturated core in a well near Marlow, in the northwestern part of the county. A new producer for the Tussy area also served to keep that area alive and watched by the oil operator.

Ed V. Parson's Olson 1, C SW SW 21-2n-8w, near Marlow, cored from 5211 to 5216 feet and showed a saturated sand with a very good show of oil and gas. Operators are setting 7-inch casing at 5205 feet. A great deal of leasing is being done in the area as a direct result of the findings in the Parson well.

Carter Oil Company's Ivey 1, SWc 33-1n-3w, in the north area of the Tussy field of Garvin County, was rated a producer, flowing 155 barrels of oil by heads every 3 hours, the flow coming up through wide-open casing. Production started early November 1, and continued until the following day.

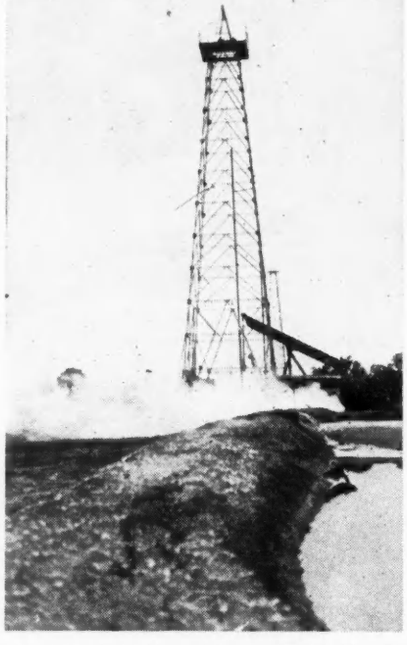
Cox & Hamon Inc.'s Davis 4, NE SW SE 32-1n-3w, was making about 125 barrels of oil daily, through tubing.

Skelly Oil Company's Miller 1, NE NW NE 5-1s-3w, on the Carter County side of the pool, was coring oil sand at 2758 feet. It had previously cored in oil-sand from 2732 to 2744 feet.

Winkler & McQueen Inc.'s Moore 1, NWc NE 5-1s-3w, was drilling in dry sand at 1557 feet. On the Garvin side of the pool, the same interests' Davis 4, NW SE SE 32-1n-3w, had derrick up and were starting operations. Their Davis 3, SWc SE SE 32-1n-3w, was drilling in hard lime at 1710 feet.

Pure Oil Company's Baker 1, NEc 7-2n-1e, near Pauls Valley in Garvin County, topped the Wilcox sand at 4000 feet and cored from 4000 to 4004 feet. Operators recovered a 42-inch core with the first four inches shale and the remainder white sand with nothing showing. Operators were to ream the hole down and take another core.

Sinclair Prairie Oil Company's Stockton 1, SEc SW 26-6s-2w, in the Oswalt area of Love County, flowed 100 barrels of oil the first hour, 20 barrels of oil the second hour, and 10 barrels the third hour, through 7-inch casing, then went dead. It was producing from the Pennsylvania sand at 6920 feet.



Magnolia Petroleum Company's Statler 3, SEc SW 28-2n-7e, near the south edge of Fitts Pool, Pontotoc County. This well proved another horizon for production in this prolific pool when it tested on October 21 for 325 barrels of oil from the Oil Creek sand below the Wilcox and above the Arbuckle lime. Although it is known that the Oil Creek sand does not exist generally throughout the field, the discovery may lead to deeper drilling in the southeast section of the field.

SOCIAL FORMS READY

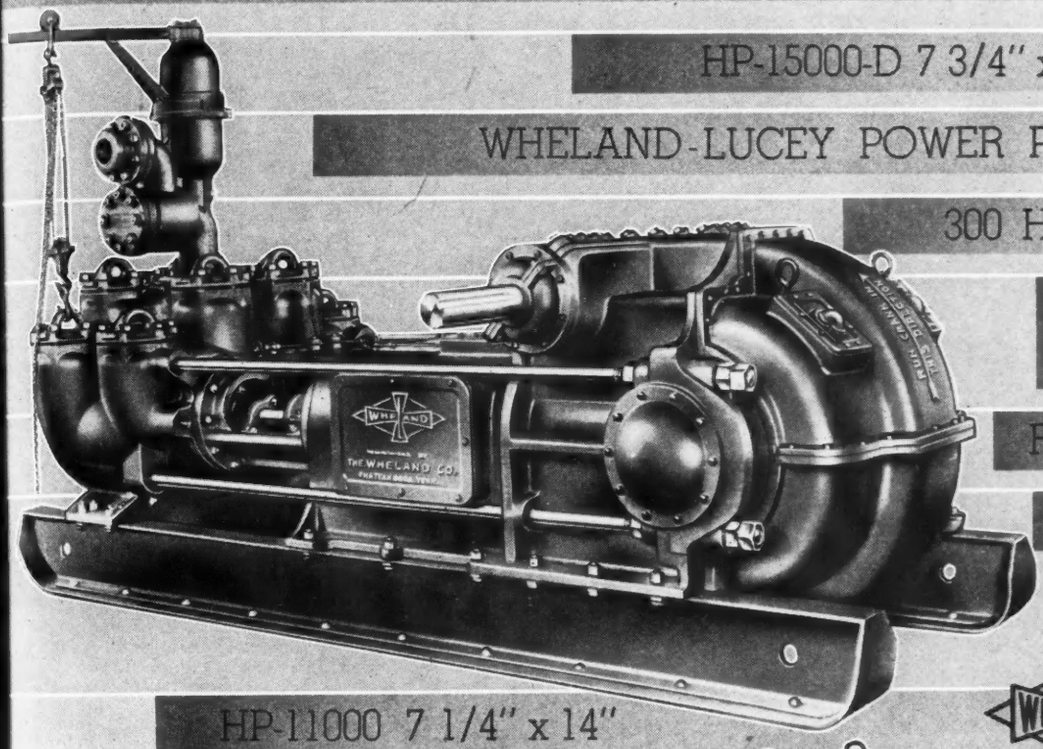
Washington, D. C.—All employers in the oil industry who are subject to the provisions of the Social Security Act will this month receive the forms which they will be required to fill out to secure identification numbers, it was announced Friday by the Social Security Board.

Beginning November 16, postoffices throughout the country will show the business name and address of the establishment, a description of the exact nature of the business, including the principal products if a manufacturer, or the principal goods or services sold if a non-manufacturing concern, and the approximate number of persons employed in any capacity, whether on salary, wages or commission, including executives.

Beginning November 24, the postoffices will begin the distribution of forms to be filled out by employes, each of whom also will be given an identification number. These forms will show merely personal data regarding the employe, and the name and address of his present employer.

The forms to be distributed this month are designed merely to secure an identification of every employer and employe covered by the act. Forms for the reporting of the payroll taxes imposed under the law will be made available after the beginning of the year.

Modernize Your Rigs



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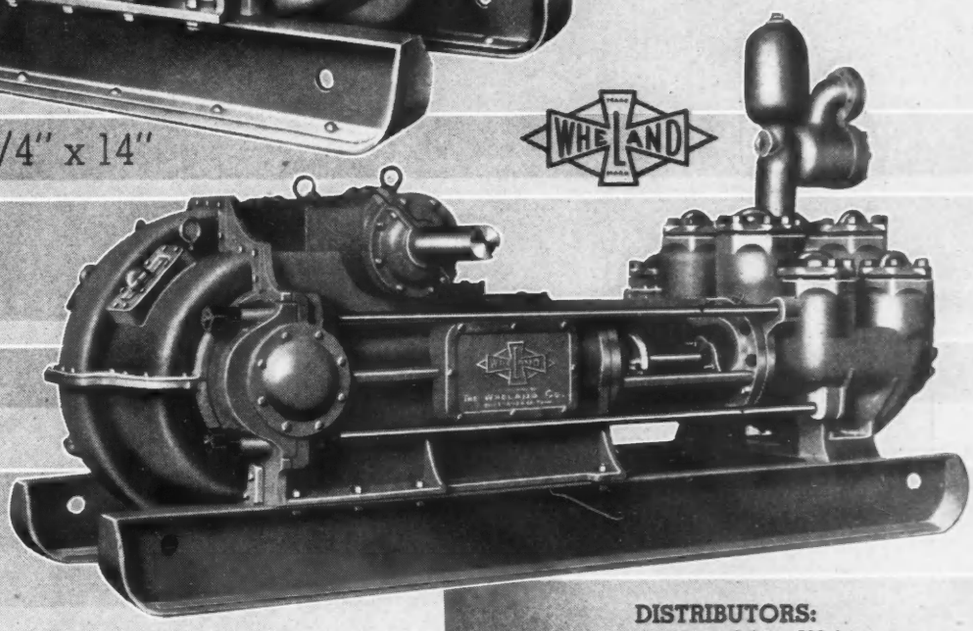
TIMKEN BEARINGS



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Chattanooga, Tenn.

OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARTER COUNTY—		
Cox & Hammon, Wesley 28, nw nw sw 3-4s-3w (pb 1000)	5	1055
COMANCHE COUNTY—		
Ashcraft & Palmer, School Land 7, nw nw nw 20-2n-10w	*	1017
CREEK COUNTY—		
Sinclair Prairie, Upton 13, cel ne ne 4-16n-12e	12	2270
Bailey et al, Long 1, nw nw nw 5-14n-9e	*	1301
Ross et al, Gates 1, ce½ se 21-16n-9e	*	2912
Sinclair Prairie, Shaffer 3, ne ne sw 3-17n-7e (otd 2596)	*	2621
Milton Mershon, Noble 1, nw nw nw 6-17n-10e (pb 2360)	10	2338
Brady et al, Crothers 1, nw nw se 18-19n-9e	125	2350
JEFFERSON COUNTY—		
Twin State, Major 1, sw se nw 21-5s-6w	*	3623
LOGAN COUNTY—		
Continental, McConnell 4, ne sw se 28-17n-4w	¶74 & 53,966	6295
MUSKOGEE COUNTY—		
Joe Paul, Perry 1, cwl sw sw 13-13n-16e	*	2354
Herrod 2, cne nw 24-15n-17e	*	2060
NOBLE COUNTY—		
Incorporated Pet., Producers Schlops 1, ce½ e½ se 32-20n-2w	lcn.	abd.
Stanolind-Amerada, Kolb 4, sw se nw 33-20n-2w	131	5098
OKFUSKEE COUNTY—		
Chapman, Cudjo 3, se sw se 25-10n-8e	360	1752
Blackwell, Dolton 6, nw ne ne 36-10n-8e	¶2 & 35	1735
Sinclair Prairie, Palmer 2, se ne nw 19-10n-9e	47	1906
Gulf Oil, Cohee 4, sw nw nw 31-10n-9e	186	1787
Cohee 7, ne nw nw 31-10n-9e	192	1779
Manahan Oil, Schlotz 4, sw ne nw 31-10n-9e	¶3-15	1763
Sinclair-Prairie Carolina 5, sw ne sw 31-10n-9e	140	1751
Greenfield et al, Rentie 1-A, nw nw se 24-12n-11e	*	1832
OKLAHOMA COUNTY—		
Continental, Young 12, se sw nw 31-14n-3w	¶16 & 10,907	6699
OKMULGEE COUNTY—		
Art Thompson, Perryman 2, nw nw sw 25-12n-12e	*	640
Wallace, Rentie 1, sw nw se 11-14n-7e	*	2428
OSAGE COUNTY—		
Bay Oil, 2, ne nw sw 25-22n-7e	93	2940
Continental & Gulf, 4, sw nw sw 22-24n-7e	47	2565
Lewis Prod., Callihan 8, se nw sw 23-26n-6e	908	2968
PAWNEE COUNTY—		
Johnson O&R, Byers "A" 11, nw nw ne 31-21n-9e	*	336
PITTSBURG COUNTY—		
Midwestern O&G, Courts-Shelton 2, sw sw se 7-7n-18e (pb 2247)	¶5	2319
PONOTOC COUNTY—		
Blackstock Oil, Craddock 1, ne ne se 25-2n-6e (pb 3940)	2760	4250
Magnolia, Metropolitan Life 24, ne nw ne 27-2n-7e	¶2½ & 2968	4285
Simpson, Westheimer 4, ne se ne 27-2n-7e	¶2½ & 3051	4277
Magnolia, Burris "B" 8, ne se ne 28-2n-7e	¶2½ & 4128	3627
Skelly, Park College 16, ne sw ne 28-2n-7e	¶2¾ & 2424	3565
Carter, Richards 21, sw sw ne 30-2n-7e	¶17 & 1500	3571
Mary "F" Oil, Miller 2, sw ne se 16-5n-8e	8	950
POTTAWATOMIE COUNTY—		
Haliburton, Pierson 2, se se ne 9-7n-4e (pb 3513)	42	3720
Thomas 2, nw ne ne 9-7n-4e (pb 3558)	24	3716
Gulf Oil, Vinson 2, nw sw ne 13-7n-4e	857	4157
Indian States Oil, Junk 1, sw se se 32-11n-4e	¶5 & 200	4418
Fred Phillips et al, Dean 1, ce½ se nw 23-11n-6e	*	4247
Magnolia, Reid 4, ne ne nw 34-8n-8e (pb 3322)	*	4202
SEMINOLE COUNTY—		
Deep Rock, Hagler 5, ne ne ne 19-9n-7e	40	4046
Hagler 6, se ne ne 19-9n-7e	65	3484
Gulf Oil, Fife 1, cw½ se se 2-10n-6e	*	4328
Pioneer Drlg., Twinam 1, sw ne ne 35-11n-6e	111	4150
Sinclair Prairie, Harjo 4, sw sw nw 7-5n-8e	68	4165
B. F. Green, Spellman 3, nw sw 7-6n-8e	10	2739
Blackwell, Baker 6, sw nw se 11-7n-6e	200	4192
Sinclair Prairie, Sunny 8, ne ne nw 14-7n-6e	165	4220
STEPHENS COUNTY—		
Hartman et al, Robinson 2, nw nw nw 15-3s-5e (pb 1485)	40	1498

*Failures; †Junked; ¶Million cu. ft. gas.

CITY AREA QUIET

Oklahoma City.—The Oklahoma City sector of the Sooner State was quiet during the past week, with most of the reports coming in from the Moore pool of Cleveland County, where several wells are drilling but not making any unusual shows. A new location was made in the Crescent pool of Logan County, and a good producer was completed in the Edmond pool of Oklahoma County.

Denver Producing & Refining Company and Amerada Petroleum Corporation's Kellar 1, NWc NE 34-10n-2w, in the Moore pool, topped the Wilcox sand at 7381 feet and drilled to 7409 feet. The hole was full of water. It was plugged back to 7312 feet and bailed down, where operators found 4000 feet of oil in the hole with no water. It was shut down and may be acidized.

Sinclair Prairie Oil Company's Holmes 1, NEc SE 28-10n-2w, topped the Checkerboard lime at 5465 feet and was drilling below 6250 feet; the same interests' Fant-Meyers 1, SE NW NW 27-10n-2w, was drilling at 3998 feet, and its Franklin 2, SEc 21-10n-2w, was drilling at 4680 feet.

Carter Oil Company's James 1, SW NE SW 27-10n-2w, topped the Checkerboard lime at 5473 feet; topped the Oswego lime at 6475 feet; the Hunton lime at 6712 feet, and was drilling ahead at 6823 feet in the Hunton lime.

In the Edmond pool of Oklahoma County, Ohio Oil Company's 2-Dahl 3, NW NE SW 31-14n-3w, on the west edge of the pool, was acidized and flowed 5 barrels of oil and had 8,309,000 cubic feet of gas per hour from a depth of 6660 feet. Operators were starting up to deepen. The same company's Hathaway 3, NE SE NW 6-13n-3w, was drilling at 4165 feet, and its Johnson 1, SEc 25-14n-4w, was drilling at 5410 feet.

In the Crescent pool of Logan County, Carter Oil Company staked location for Herra 4, SWc 28-17n-4w.

WILDCAT SPRAYS OIL

Wichita Falls.—Yorktex Petroleum Company's F. G. Burnett 1, near center of G. W. Hill Survey, semi-wildcat due west of Rathke field, Young County, is spraying 5 barrels of oil daily with 5,000,000 feet of gas at 4090 feet. It will be shot and probably acidized.

Two New Fields

IN ELLIS COUNTY AND DEEP CLARK TEST MAY PRODUCE

KANSAS

WEEKLY STAFF REPORT

Wichita.—Kansas drilling activity picked up last week as operators gave the state assurance of at least two new pools, and extended several established oil producing areas. The deepest drilling well in the state, located in Clark County, is attracting much attention as operators prepare to wash in.

The two new pools were both in Ellis County, and were both drilled by the same company. Bridgeport Machine Company's Madden Estate 2, NE NW NW 26-15s-18w, southeast of Hays, pumped 619 barrels of oil in 24 hours from the Siliceous lime at 3595 feet (corrected), after being acidized with 2000 gallons. Originally completed for 400 barrels of oil, Madden 2 was recently deepened when production began dropping off. The new area is southeast of the Ruder pool.

Bridgeport's Ubert 1, NEc NW 12-13s-18w, northeast of Hays, was completed for 416 barrels of oil and 3 barrels of water from the Siliceous lime at 3624 feet. It is 3 miles west of production in the Catherine pool, and almost due south of the Shutts pool.

Nearby, Ohio Oil Company's Karlin 1, NEc NW 10-13s-17w, south offset to the discovery producer of the Catherine pool, was completed for 219 barrels of oil from the Siliceous lime at 3381 feet. The production followed acidization. Harris & Haun and others drilled in the initial producer in the pool several months ago. It established a potential of 350 barrels of oil.

Deepest Well May Produce

In Clark County, Kansas' deepest drilling well, Olson & Watchorn's

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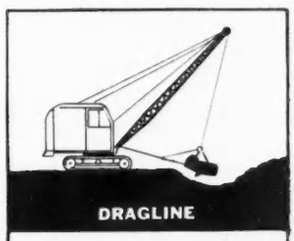

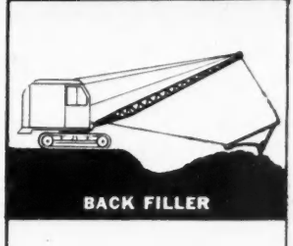

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P&H BANTAM WEIGHT — FIRST TO THE JOB AND FIRST THRU

Morrison 1, C SE SW 17-32s-21w, northeast of Ashland, was preparing to wash in with rotary tools after picking up 2200 feet of oil and 120 feet of water from the Viola lime at 6848 feet. Located in a border county, the well, it is hoped, will arouse some interest in southwestern Kansas and northwestern Oklahoma.

Darby Petroleum Company et al's Turgeon 2, SWc 11-16s-12w, which recently extended production 1½ locations northwest in the Beaver pool of Barton County, was deepened from the sandy conglomerate at 3333 feet to the true basal sand at 3353 feet, and was showing for a strong producer. Oil had filled 2900 feet in the hole, and operators were running a liner preparatory to taking a production test. The basal sand was picked up at 3352 feet, and the hole carried on down only 1 foot when oil began showing. Completed in the conglomerate a week or so ago, the well made only 209 barrels of oil in 24 hours. Completion of Turgeon 2 as a commercial producer will mark it as the first basal sand in that pool, which has 9 producers with a potential of 3212 barrels of oil.

The Isern pool of Barton County was extended ¼ mile east into Rice County when Magnolia Petroleum Company's Bayer 2, NWc 7-20s-10w, was completed for 1423 barrels of oil from the Siliceous lime at 3290 feet after being acidized. Magnolia has started drilling at Bayer 3, south offset to the new producer. Bayer 1, ½ mile south of the No. 2 well, was completed as a dry hole.

Skelly Oil Company's Bloomer 1, NWc SW NE 36-17n-11w, in the Bloomer pool of Barton County, western Kansas, on a 60-day retest, received a potential of 2707 barrels of oil as against the original potential of 2297 barrels.

E. B. Shawver et al's Kaegi 1, NE NW NW 21-19s-1w, in the northeast part of the Ritz-Canton pool of McPherson County, had a show of oil in the Wilcox sand. The sand was topped at 3425 feet and the hole drilled to 3428 feet where the oil showing was found. Operators were running 5-inch casing preparatory to drilling in. Kaegi 1 is the first test to encounter oil in the Wilcox sand in the northeast sector of the pool.

Dickey Oil & Refining Company et al's Goering 3, SEc 17-21s-1w, in the north end of the Graber pool, was completed for 2000 barrels of oil from the Hunton lime at 3331 feet, following acidization with 4000 gallons. Goering 3 is one of the larger producers in the field, the first two producers there having a combined potential of only 2207 barrels of oil. Location has been staked for Goering 4.

Extensive drilling and many completions in the McPherson district have helped to place the potential rating of the area at 197,853 barrels of oil, the highest for the district in more than a year. There are 931 producing wells in the area, and more wells were completed during October than in any month during 1935. The Burrton field continues to be the largest in the county, where 180 wells producing from the chat have a potential of 63,080 barrels of oil, and 112 wells in the Hunton lime are good for 61,906 barrels of oil. One Siliceous lime well is good for 416 barrels.

Some promise of production was had at Sinclair Prairie Oil Company's Gentry 1, NEc 1-33s-15w, in the Medicine Lodge area of Barber County. Operators recovered an 8½-foot core saturated with oil from between 5271 and 5281 feet in the Wilcox sand, and the hole was being bailed preparatory to testing. Top of the Simpson was reported at 5283 feet, and the Wilcox sand was had at 5252 feet. The formation softened at 5269 feet, and the tools went to 5271 feet where the odor of oil was first reported.

Continental Oil Company, Empire Oil & Refining Company and Sinclair Prairie Oil Company have staked location for Michekls 1, NEc SW 12-18s-18w, which is an attempt to prove the trend supposed to exist about 1 mile north of the Geneseo pool of Rice County. The county has 20 wells with a potential of 31,849 barrels of oil.

The west side of the Hilger pool of southeastern Reno County was apparently defined last week as two tests, both located ¼ mile from production, encountered water instead of oil. First of the failures was Dickey Oil & Refining Company et al's Williams 1, SEc 5-26s-4w, which topped the Viola lime at 4077 feet and drilled to 4089 feet where water was encountered. One-half mile to the south, Stanolind Oil & Gas Company's Moore 1, in Section 8-26s-4w, filled 2500 feet with fluid from 4041 feet in the Viola lime after drilling plugs at 4035 feet. Seventy-five percent of the fluid was found to be water.

Better success was had at the north end of the Hilger pool where Derby Oil Company's Beltz 3, SE SW SW 4-26s-4w, was completed for 728 barrels of oil from the Hunton lime at 4110 feet. It is west of the town of Andale.

Alcorn et al's Westhusin 1, C NE SE 11-9s-17w, near Plainville in Rooks County, filled 275 feet with oil in 24 hours from the Oswald lime at 3194 feet after swabbing 45 barrels of oil in 7 hours. The well was being deepened to the Siliceous lime. If the lower horizon proves non-productive, the well is to be plugged back to the Oswald and completed there.

Lloyd & Frost et al's McKinley 3, in Section 33-31s-3w, in the Weathered pool of Cowley County, was completed for 2030 barrels of oil natural from the Siliceous lime at 3305 feet. The new producer is comparable in size to other wells in the pool. The other six wells there have a combined potential of 8213 barrels of oil.

George T. McNish's Werner 1, SEc SW 31-32s-6e, east of Winfield in Cowley County, which was completed a week or so ago for 4,000,000 cubic feet of gas in the Stalnaker sand, was being drilled deeper to the 2400-foot level.

38 KANSAS STARTS

Wichita.—Thirty-six wells were completed by Kansas operators during the past week. Twenty-eight wells were producers with an initial production of 38,000 barrels. Seven starts resulted in failures and there was one abandoned location. There were no gas wells completed in the state during the past week.

Kansas reported 38 new locations when the week closed, with Russell County leading the list with 13 scheduled starts. Rice County added four locations, Barton, McPherson and Stafford counties three each, and Reno and Woodson counties two each. One new start was reported from Butler, Ellis, Harvey, Rooks, Rush, Scott, Sedgwick and Sumner counties.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BURTON COUNTY—		
Yarnell & Carlson, Roth 1, ne ne ne 35-18s-12w	*	3489
BUTLER COUNTY—		
Richmond Drlg., Getter 1, cw½ se sw 17-27s-6e	25	2769
Admiral Oil, Brown 1, cs½ ne sw 29-28s-4e	25	2532
COWLEY COUNTY—		
Trees Oil, Littrell 3, cw½ ne 19-20s-4e	237	2890
ELLIS COUNTY—		
Margay Oil, Bemis "B" 5, se sw sw 15-11s-17w	1600	3397
Empire, Bemis 1, ne ne se 21-11s-17w	2195	3420
Wolf Creek et al, Staab 1, nw nw se 19-12s-17w	*	3786
Polifka 1, sw sw ne 24-13s-18w	*	3990
ELLSWORTH COUNTY—		
Bradley & Seanlyon, Nienke 2, nw nw nw 13-17s-9w (pb 3060)	151	3209
GREENWOOD COUNTY—		
Landon & Parish, Rebecca 2, ne se se 16-24s-12e (pb 1469)	8	1690
HARVEY COUNTY—		
Shell, Balzer 1, sw sw ne 8-22s-3w	1207	3565
McPHERSON COUNTY—		
Continental et al, Graber 2, nw ne nw 32-21s-1w	681	3297
RENO COUNTY—		
Palmer, Goering 1, ne sw ne 1-23s-4w	*	3347
Empire, Scheuchzer 4, cn¼ n½ nw 20-24s-4w (pb 3352)	230	3356
Magnolia, Harris 2, ne nw nw 9-26s-4w	236	4105
Empire, Mauck 1, cnl ne se nw 15-26s-9w	6708	4151
RICE COUNTY—		
Permian Oil, Monroe 1, cne ne 9-20s-7w	*	2605
Ohio Oil, Proffitt 8, ne ne nw 5-20s-9w	1499	3228
Saco Oil, Foote 3, nw sw ne 7-20s-9w	479	3289
Magnolia, Bayer 2, nw nw nw 7-20s-10w	1423	3290
S & S Drlg, Hauschild 2, ne nw ne 15-21s-7w (otd 3384)	5098	3398
Hauschild 3, sw nw ne 15-21s-7w	1463	3396
RUSH COUNTY—		
Morgan & Flynn, Gixick 2, se se se 25-18s-16w	88	3619
Continental, Strong 1, nw nw sw 26-13s-16w	lcn.	abd.
RUSSELL COUNTY—		
Empire, Ehrlich 6, sw sw se 28-13s-14w	708	3309
Central Pet., Foster 3, sw se sw 3-14s-15w	497	3130
Pryor & Lockhart, Polcyn 1, ne sw ne 10-14s-15w	1122	3284
Coralena Oil, Trapp 9, ne sw se 30-15s-13w	2508	3268
Trapp 10, nw sw se 30-15s-13w	2391	3264
W. I. Southern, Inc., Schafer 7, se nw ne 31-15s-13w	2722	3253
STAFFORD COUNTY—		
Lauck et al, Snider 1, sw sw ne 3-21s-11w	*	3487
I. T. I. O., Mellies 1, cn½ n½ ne 6-22s-11w	*	3536
Stanolind, Heyen "C" 1, sw nw nw 32-22s-11w	965	3568
Lario & Stanolind, Tudor Morgan 1, se se nw 23-24s-13w (otd 3628)	1440	4087
SUMNER COUNTY—		
Slick, Pryor & Lockhart et al, Murphy 3, se se se 32-31s-1w	2154	3651
WOODSON COUNTY—		
Elbar Oil, Opperman 3, cln s½ ne ne 27-23s-14e	140	1645

*Failures; †Junked; ¶Million cu. ft. gas.

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Allowable Is Up

NEW MEXICO QUOTA PUT AT 83,500 BARRELS PER DAY

WEEKLY STAFF REPORT

Hobbs, N. M.—The production quota of New Mexico's fields was advanced to 83,500 barrels daily effective November 1 by the oil conservation commission, representing a boost of 500 barrels in the total allowable. In order to compensate for new completions in Lea County the output of the state has been raised progressively since June, with each month thereafter establishing a new record. New wells more than absorbed the minor raise granted for November. This resulted in the allowable of non-marginal wells prorated on a flat basis in Lea County being cut from 101 to 100 barrels daily.

The extra production restrictions borne by operators in the Monument field since mid-September because of the two majors in the area limiting their combined takings to 12,000 barrels daily, irrespective of the number of new completions, will not be lifted until after the close of the year. Pegging the allowable of this field, which has 219 flowing and pumping wells, has lowered the average yield per well to 54.8 barrels daily. It was averaging 88.7 barrels daily immediately prior to the big reduction, which was shifted by the commission to other areas in the county, thus enabling the state to retain its hard won markets even though one prolific field is severely penalized.

Many Completions Due

A heavy quota of completions is in store for Lea County towards the close of 1936. For seven consecutive weeks new locations have exceeded or equalled completions. During the past week there were only seven completions in the county, but there were 11 new locations divided between Eunice, Monument and East Jal fields. Monument field recorded for new wells and seven locations, including the following trio for Amerada Petroleum Corporation: Andrews 5, C SW NW 12-20s-36e; State 6-T, C NW NE 20-19-s-37e; and State 7-T, C NW SW 28-19s-37e. Repollo Oil Company is starting up on N. P. Bordages 2-A, SW SE SW 21-19s-37e, northeast outpost and within one-half mile of a dry hole, and W. M. Roach 2, NW NE NW 21-20s-37e. Gulf Oil Corporation's Theo. Anderson 1, C SW SE 8-20s-37e, and Stanolind Oil & Gas Company's O. J. Gilluly 1, C SW SW 8-20s-37e, are new tests for the south portion of the field.

Tide Water Oil Company's T. Anderson 2, C NE SE 8-20s-37e, blew out while drilling in the upper lime at 3720 feet with a rated flow of 60,000,000 feet of dry gas. Production diverted through the mud line caught fire, and burned until the well was killed with high pressure mud pumps mounted on four trucks. Derrick and equipment escaped damage by fire due to a favorable wind. Gulf Oil Corporation's Whitmire 1, C SW NE 8-20s-37e, northwest diagonal offset, flowed 114 barrels oil in six hours through open two-inch tubing after using 1000 gallons of acid at 3882 feet, or 325 feet sub sea. Tubing packer was installed at 3820 feet after the well originally tested 20,000,000 feet of gas. Anderson-Prichard Production Corporation's H. M. Britt-Conoco 2-A-6, C NE SW 6-20s-37e, showed up with an excessive gas oil ratio when tested at 3890 feet, or 308 feet below sea level, and was preparing to deepen last week after production averaged only five barrels of oil per hour with tubing packer excluding the big flow of gas.

Monument Outpost Disappoints

Efforts carried on almost continuously since last May to make an oil producer of C. & G. Oil Company and The Texas Company's Ellen Weir 1, C NE NE 14-20s-37e, about three miles east of production in the Monument area, have been only partially successful. The hole is bottomed at 4074 feet, or 510 feet sub-sea, in lime section equivalent to the Hobbs pay level. It swabbed 53 barrels fluid in 10 hours, including about 40 percent bs&w. It is believed capable of about three barrels oil per hour.

Majors were responsible for three new locations assigned the Eunice lime area the past week. They included Continental Oil Company's State 6-D-15, C NE SE 15-21s-36e; Gulf Oil Corporation's State-Bell 2-D, C SW SW 6-21s-36e; and Humble Oil & Refining Company's State-Aggies 6, C SW NE 31-20s-37e. The Texas Company's State-Aggies 4, a south offset to the latter, responded to treatment with 2000 gallons of acid solution in lime at 3740-3868 feet, with an elevation of 3548 feet, flowing 18 barrels hourly through open tubing.

In the East Jal area, Sun Oil Company has let contract for the drilling of I. R. Stuart 2, C SW NE 15-25s-37e, offsetting a recent flowing well scored by Stanolind Oil & Gas Company.

Roosevelt County gained a new wildcat project through the starting of road construction to the site of Claudell Development Company's Wilmes 2, C SE NE 17-2s-30e. A previous test by the company on the Wilmes tract was abandoned in Gloietta at 3659 feet in July, 1935, after being credited with oil showings. Franklin Oil Corporation et al's Rual Giphant-Dickenson 1, NWc 28-3n-30e, was credited with logging white lime while drilling at 2410 feet. It has an elevation of 4458 feet, and is contracted to 3500 feet. A number of East Texas independent operators are participating in this rank wildcat, which is near center of a 20,000-acre block.

NEW MEXICO

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice Field)—		
Humble, J. D. Knox 6, c ne se 10-21s-36e	700	3890
The Texas Co., State-Aggies 3, ne ne ne 20-20s-37e	2500	3857
State-Aggies 4, c nw se 31-20s-37e..	500	3868
LEA COUNTY (Monument Field)—		
Gulf Oil Corp., State-Kutter 1, c sw se 20-19s-37e	100	4007
Whitmire 1, c sw ne 8-20s-37e....	456	3882
Shell Pet. Corp., State 1-K, c ne ne 36-20s-36e	300	3850
Tide Water, State 1-I, sw se sw 16-20s-37e	1500	3850

*Failures; †Junked; ¶Million cu. ft. gas.

I. P. A. A. SPEAKERS

Tulsa.—It has been announced at the headquarters of the Independent Petroleum Association of America that the speakers at the annual dinner of the association, to be held on Monday evening, November 30, during the annual meeting at Oklahoma City, will be Chas. F. Roeser, president of the Independent Petroleum Association of America, General Baird H. Markham of New York City, director of the American Petroleum Industries Committee, who will talk on the subject "Taxation"; and Colonel E. O. Thompson of Austin, Texas, chairman of the Interstate Oil Compact Commission and chairman of the Railroad Commission of the State of Texas, who will discuss the subject, "Interstate Oil Compact."

The subject of "Taxation" is of vital interest to the entire citizenship of this country and there is no one who has studied the subject of taxation, in so far as it pertains to the petroleum industry, or who is better qualified to discuss that subject, than General Markham.

Colonel Thompson has been a member of the Interstate Oil Compact Commission since its inception, representing the State of Texas, and is thoroughly conversant with the provisions of the compact and the work of the commission. With the compact expiring next year, a message from the present chairman of the commission will be most important at this time, when consideration is being given to a renewal of the Interstate Oil Compact and the securing of additional oil producing states as members.

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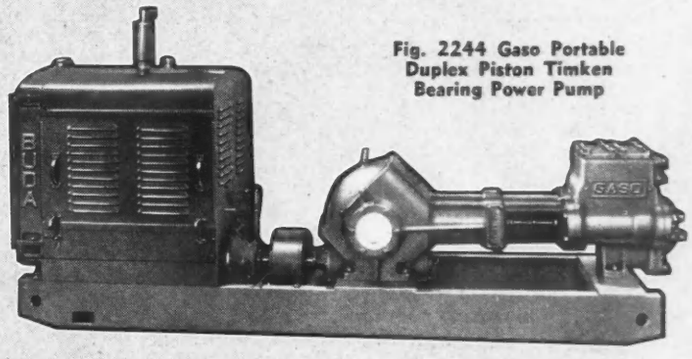

Fig. 2244 Gaso Portable Duplex Piston Timken Bearing Power Pump

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Big Extension

GOLDSMITH OUTPOST ADDS TWO MILES TO FIELD

WEEKLY STAFF REPORT

Midland, Texas.—Recent extension of Goldsmith field, Ector County, two miles northwest by Empire Oil & Refining Company's H. E. Cummins 1-C, NEc SE Section 22, Block 45, T-1-N, assumed more important proportions the past week when it responded to acid treatment with a flow of 700 barrels of oil in 24 hours. It had previously flowed 125 barrels natural from dolomite lime section at 4196-4293 feet, and small amount of sulphur water exhausted after producing several days. This outpost is bottomed at 1080 feet sub sea, indicating a level structural position when correlated with nearest flowing production. The company holds lease on 2480 acres of the Cummins land, but a portion has been condensed by its dry hole about 1½ miles north by west.

Lower Permian Tests

The lower section of the Permian lime section in Ector County is being explored by Sinclair Prairie Oil Company's J. L. Johnson 1-A, NEc NW Section 42, Block 42, T&P Ry Survey, T-1-S, about three miles northeast of nearest production in the Foster field. Drilling was in progress below 5400 feet, or about 1000 feet below the regular producing horizon for the area. The decision to make a deep test was influenced by the fact that this wildcat checked about 85 feet higher structurally on top of the lime than the nearest oil producer.

York & Harper, Incorporated, and The Sloan and Zook Company have contracted to drill a wildcat on the H. C. Foster tract, SWc Section 8, Block 42, T&P Ry Survey, T-2-S, about 1-1/3 miles northeast of production in the south portion of the Foster field.

A damaged casing seat resulting from a 160-quart nitro shot given Honolulu Oil Corporation and Cascade Petroleum Company's Duggan Brothers 1, southeastern Cochran County discovery test, has delayed an accurate test of the production, but the well averaged 100 barrels daily flow the past week while swedging of casing was in progress. It is about 28 miles north by east of nearest production, and the northermost producer in the West Texas portion of the Permian Basin. Salty sulphur water encountered between 5080-98 feet, with an elevation of 3693 feet, was excluded in plugging back to 5068 feet. Performance of this well will tend to encourage more development along the north rim of the basin. In southwestern Hockley County, The Texas Company et al's Bob Slaughter 1, is running a protection string of 8⅝-inch casing to the bottom of the hole at 3065 feet after clearing up several fishing jobs. It has an elevation of 3560 feet. Uscan Oil Company and Illinois Oil Company's A. R. Brownfield 1, Terry County wildcat, is awaiting arrival of 7-inch casing to exclude flowing salt water encountered at 4620-25 feet, with an elevation of 3413 feet.

To Test Seminole Prospect

A nearly decision as to the ability of the Seminole geophysical prospect, Gaines County, to yield oil production below the prolific gas zones found above and within the lime section will be made by Amerada Petroleum Corporation et al's S. J. Averitt-Ohio 1-A, C NE NE Section, 228, Block G. Drilling was in progress at 4940 feet late last week, or 30 feet below the maximum depth reached by a junked gasser on the same 40-acre site. Seven-inch pipe was cemented at 4812 feet in the new test, and the hole is in shape for an immediate production test in the event saturated lime is picked up. In the lower part of the county, Stanolind Oil & Gas Company's D. Davis 1, C NW SE Section 18, Block A-21, PSL Survey, is considered about eliminated as a prospective producer in its failure to log saturation below 4830 feet, although it has drilled to 4930 feet, or 1648 feet sub sea. It is below the horizon that showed water in Landreth Production Corporation's W. H. Kirk 1, a small discovery, situated 1¼ miles south by east.

R. H. Henderson, Midland, et al's J. E. Parker-Shell 1, outpost test for Fuhrman field, Andrews County, was awaiting production test through tubing after a 660-quart of nitro shot in broken lime at 4190-4555 feet. Prior to shot a small amount of free oil was swabbed from the hole.

Ordovician Try Fails

Second try for production in the Ellenberger section of the Ordovician lime in the Sand Hills field, Crane County, by Gulf Oil Corporation proved disappointing. This company's Waddell et al 2, C NE SW Section 18, Block B-21, PSL Survey, about 1½ miles northeast of its discovery of the deep oil pay, showed 1860 feet of sulphur water and drilling fluid when the formation teater was used at 6590-6709 feet. Top of the Ellenberger was logged at 6507 feet, or 3888 feet sub sea. The hole is due to be plugged back to about 6100 feet to try to make a producer from the Simpson, or middle Ordovician section, which was entered at 5995 feet, or about 54 feet lower than the deeper producer. In the regular lime horizon for this field, Humble Oil & Refining Company's J. B. Tubb, 4, flowed 12 barrels oil the first hour after using 3000 gallons of acid at 4420 feet, and will be re-acidized. American Liberty Oil Company and Truett Cranfill's Tubb-Humble 1, which was deepened from 4314 feet to 4419 feet, is awaiting acid treatment after showing for about 25 barrels daily. John I. Moore et al's T. C. Barnsley 1, located about 8 miles southeast of the single deep producer in the Sand Hills area, was drilling at 6260 feet in seeking production from the Ordovician.

Ohio Oil Company's M. H. Goode 1 northeastern Terrell County Ordovi-

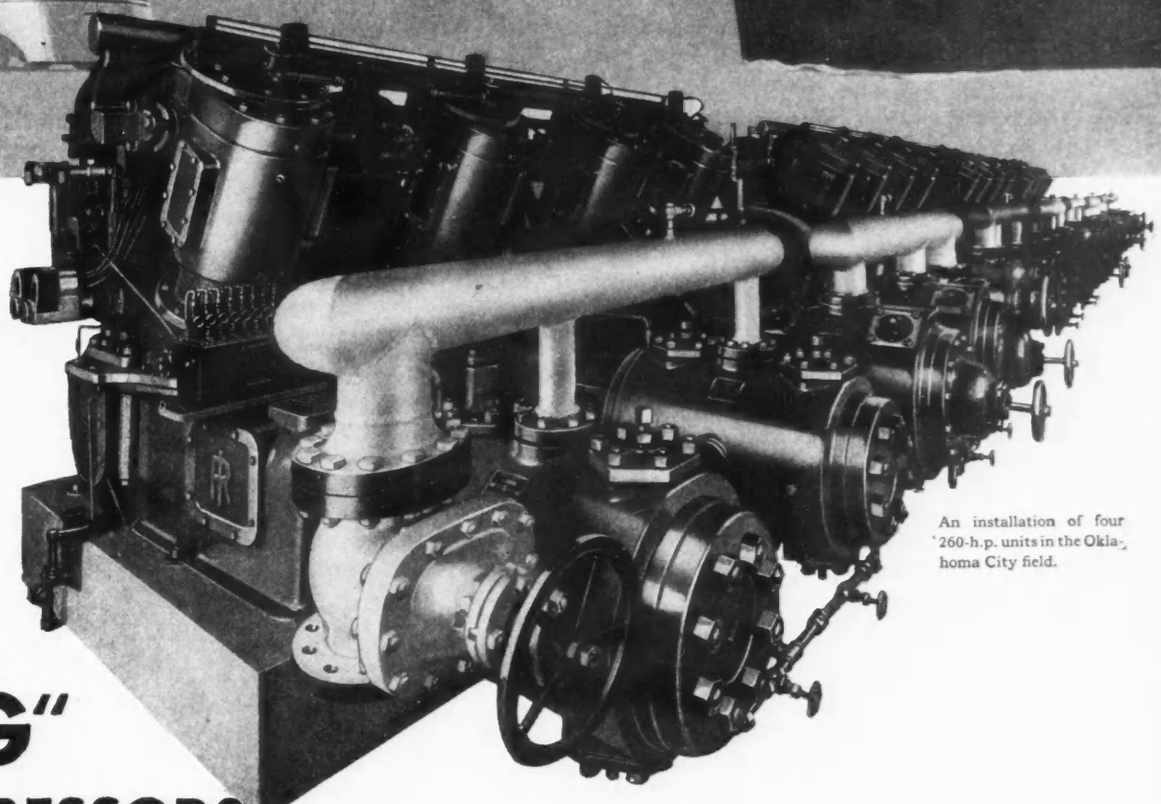
WEST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Means Field)—		
Humble, R. M. Means 8	166	4555
ECTOR COUNTY (Goldsmith Field)—		
Wm. H. Dunning et al, H. E. Cummins 2-A	541	4297
ECTOR COUNTY (North Cowden Field)—		
Sinclair Prairie, T. A. Smith 2	365	4250
HOWARD COUNTY—		
Conoco-Group 1 Oil Corp., Settles 15-S	479	1295
Settles 16-S	454	1273
Sinclair Prairie, J. P. Davis 5-B	842	2818
JONES COUNTY—		
Cliff Camp et al, O. E. Woodson 1	*	2512
John L. Reeves et al, Kelly 1	†	1535
PECOS COUNTY (Pecos Valley Field)—		
R. T. Bucy et al, P. V. Oil Co. 2	152	1650
PECOS COUNTY (Torborg Field)—		
Cardinal Oil Co., Trippett 43-E	280	600
PECOS COUNTY (Wildcat)—		
Harry Baldwin, Groebel Bros. & Robertson, Yates-Texan 3	*	1562
UPTON COUNTY (McCamey Field)—		
Gulf Oil Corp., J. H. Shirk 5	1033	2313
Stanolind, A. S. Burleson 41	798	2059
TP Coal & Oil Co., J. F. Lane 25-A	554	2117
WARD COUNTY—		
Eastland Oil Co., Hathaway 1	2011	2602
Empire O&R Co., McDonald 8	557	2475
Gulf Oil Corp., E. W. Estes 6	1463	2600
Hutchings 59	174	2739
Republic Prod. Co., C. R. Fox 3	513	2308
Richardson Oils, Inc., J. H. Hathaway 9	1783	2670
Rio Bravo Oil Co., D. Olcott 12	551	2457
Philtop O&G Co., Smith-Pure 1	*	2973
Tex-Mex Pet. Corp., S. G. Smith-Pure 7	173	2490
TP Coal & Oil Co.-Atlantic, Buckners Orphanage 1	*	2410
S. A. Thompson et al, W. D. Johnson 10-A	1552	2535
W. D. Johnson-Sun 14-B	915	2535
WINKLER COUNTY (Halley Field)—		
Bert Fields et al, E. W. Cowden 1-B	982	3000
WINKLER COUNTY (Keystone Field)—		
Richardson Oils, Inc., J. W. Bashara 1	98	3450
WINKLER COUNTY (Sayre Field)—		
Harry Adams et al, Thompson 1-B	978	3100
Gulf Oil Corp., L. Daugherty 7-A	¶21.3	2632
L. Daugherty 10	1173	3000
Humble, N. R. Colby 7-A	661	3100
Illinois Oil Co., Abilene Central Bank-Conoco 2-A	1413	3115
Magnolia, J. B. Walton 37	286	2930
J. B. Walton 38	320	2930
Joe C. Maxwell, Inc., Gar-Tex O&G Co. 3	1314	3096
Navarro Oil Co., C. C. Crenshaw 2	1023	3146

*Failures; †Junked; ¶Million cu. ft. gas.

SETTING THE PACE



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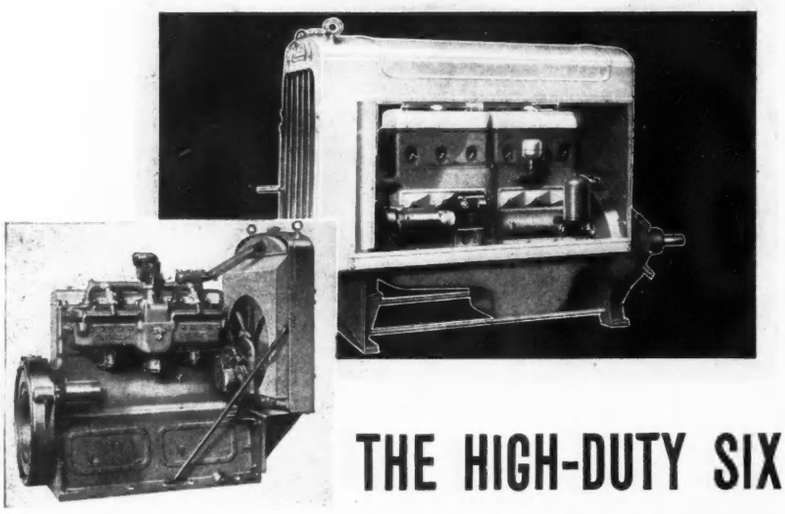

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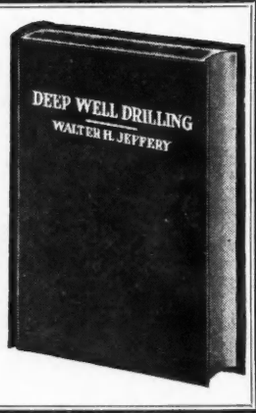


cian test, was drilling in black shale and lime at 6900 feet, with an elevation of 2405 feet. It was originally completed as a gasser at 6120 feet by Transcontinental Oil Company in 1931, and remained shut in, except for periodical gauges, during the elapsed five years.

261 TEXAS STARTS

Austin.—Permits for the drilling of 261 new wells in Texas were allowed by the Railroad Commission last week. This is 56 more than were allowed the week before. Almost all of the increase is accounted for by the approval of permits for drilling wells in East Texas, as only one was allowed the previous week.

There were 54 new permits in East Texas, which included 19 in Gregg County, 18 in Rusk County, 16 in Upshur County and one in Smith County. East Central Texas reported 41 locations, with 37 in Cass County.

The Gulf Coast reported the most locations for any one district, listing 55, of which 19 were permits for wells in Nueces County. There were 47 locations in Southwest Texas, with 17 in Duval County.

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, J. D. Carpenter 2-A, sec 89	75	1040
Deep Oil Dev. Co., Wilson 18, sec 119	75	2206
W. W. Houston et al, F. R. Foucher 1, sec 13	*	481
C. B. Long et al, Turbeville 14, blk 156	15	1520
Fred Lugenheim et al, Waggoner Est. 1, sec 3	*	1730
Bo Minnich et al, W. H. Taylor 2, sec 1	*	1230
O. R. Tautenhahn et al, Chas. Carson 2	*	904
CLAY COUNTY—		
The Texas Co., M. A. Stephenson 1, blk 3	3	1279
COOKE COUNTY—		
Anderson-Kerr Pet. Co., C. B. Blagg 1	*	2054
C. B. Blagg 2	*	2030
Bruhlmeyer 2-A	†	2114
R. S. Rose 4	96	1953
Denver Prod. & Ref. Co., Ed. Wilson 2	20	2001
Ed. Wilson 6	222	2015
Dove Oil Co., J. A. Carr 2	15	1963
F. W. Merrick, Inc., Knabe 31	*	826
Mildred Oil Co., F. C. Owen 1	54	1945
J. C. Shaffer et al, A. Towery 3	210	2106
JACK COUNTY—		
Cordova Union Oil Corp., L. J. Hester 1	100	3007
WICHITA COUNTY—		
F. P. Cullum et al, Waggoner Bros. 1, sec 35	*	681
T. F. Hunter Oil Corp., Waggoner Bros. 16-C, blk 1	70	1685
J. M. Morton et al, H. J. Hausler 1	†	3142
Rathke Oil Co., Throckmorton-Cook 1, sec 1	*	1907
Mrs. Annie M. Rowe et al, Waggoner Bros. 7, sec 2	51	1312
YOUNG COUNTY—		
S. S. Alexander et al W. B. Howard 4, sec 3401	105	918
L. T. Burns et al, W. A. Rushing 7, sec 3401	100	906
Fresno Oil Co., J. W. Cox 6, sec 18	8	595
G. E. Grininger et al, Nellie Prideaux 2	*	760
J. H. Kleiner et al, Graham 15, sec 2249	*	575
C. E. Knox et al, W. P. Stephens 1, sec 1985	150	4105
E. C. Reed et al, H. P. Cunningham 1-A, sec 1912	*	494
A. H. Schmitt et al, J. W. Casey 1-A, sec 1396	*	906
S. H. Simmons et al, Stratton 2	*	540

*Failures; †Junked; ¶Million cu. ft. gas.

WILDCAT TO TEST

Collin County project gets Paluxy showing

Dallas.—The Paluxy sand section of the upper Trinity found in northeastern Collin County by E. A. Parkford of Los Angeles, president of California-Consolidated Oil Company, and associates' wildcat on the Mrs. W. L. Fagg 38-acre tract, was awaiting production test at 2771 feet, or 2145 feet sub sea, late last week after cementing 7-inch pipe at 2655 feet. Evidence of oil saturation in cores taken in the Paluxy below 2706 feet and a favorable report recorded by an electrical formation surveying instrument attracted unusual interest among East and North Texas operators. A showdown on the ability of the well to produce will be deferred until the forepart of the current week.

Oil production from the Paluxy is confined to the Talco and Sulphur Bluff fault line fields in Northeast Texas. Successful completion of an oil producer in the Collin County wildcat, which is located in the southwest portion of the James Rutherford Survey No. 4, about 2 miles east of Blue Ridge, would set in motion a major lease and royalty play for the entire northwest portion of the East Texas Woodbine sand belt. The Collin County prospect is about 55 miles west of Sulphur Bluff, and near the projected course of the Balcones fault plane. Sulphur Bluff and Talco fields are on the northeast extension of the Mexia fault plane.

Parkford et al acquired leases last June on about 7500 acres to drill a test in the Blue Ridge area, and awarded 3500-foot contract to Cliff Camp Drilling Company, Dallas. The Georgetown lime section was logged at 1980-2651 feet, with an elevation of 626 feet.

Two Ordovician Tests

In Grayson County, Olson Drilling Company, James H. Gardner et al's D. R. Utiger 1, projected 6000-foot test for the Preston anticline structure, logged base of the Trinity section at 930 feet, with an elevation of 722 feet, and late last week was drilling in chert and green shale at 1400 feet. It is seeking production from the Ordovician lime zone.

Sinclair Prairie Oil Company and Sunray Oil Company's A. C. McCall 2, projected Ordovician lime test for Northern Cooke County, is preparing to land a protection string of 9⅝-inch pipe at 6950 feet before making further attempts to reach its objective.

WEST CENTRAL TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BROWN COUNTY—		
A. J. Baker et al, Nelson 1	*	697
Brown-Hancock & Specialty Co., McDonough 1	*	3150
COLEMAN COUNTY—		
A. Adkinson, Tr., Pfluger 4	*	1520
Elrod-Bebout & Sullivan, Haas 7	*	1525
CALLAHAN COUNTY—		
Canyon O&G Co., Inc., Breeding 1	*	2140
COMANCHE COUNTY—		
Roth & Faurot O&G Co., McMullen 1	†	2920
Slone 2	¶1-1/3	2771
Southwest Gas Co., McGinnis 1	¶¼	2800
EASTLAND COUNTY—		
Atkins & Flowers, White 1	*	3577
PALO PINTO COUNTY—		
Palo Pinto Oil Corp., Strawn Coal 16	¶¼	3320
SHACKELFORD COUNTY—		
Baker & Pardue, Davis 1	25	1396
Davis 2	67	1383
W. E. Butler et al, Morris-Buie 5	264	1566
Morris-Buie 6	185	1592
A. Cohen et al, Baker 4	10	1686
Crawford-Groover & Rhodes, Morris-Buie 3	255	1568
Geo. DeLafosse et al, Davis 1	*	608
Dale H. Dorn et al, Green 1	*	1372
F. L. Elliott et al, Smith 6	*	795
Evans, Pardue & Christie, Morris-Buie 2	10	1598
Fain-McGaha Oil Corp., Davis 1, sec 3	*	1791
R. F. Gilman et al, Herron 6	8	897
Graham Prod. Co., Green 1	*	1715
Groover-Rose, Jones & Stasney, Nail 2	*	1610
Groover-Rose & Morton, Newell 2	¶¼	1460
J. L. Hart et al, Rogers 1	*	723
Rogers 2	*	315
Rogers 3	*	423
A. Housley et al, Reynolds 4	6	931
Humble, Nail 1-D	*	1518
C. J. Kleiner & Heltzel, Dawson 1	*	1770
Merrick & Lamb, Mathews 1-C	*	1176
Pet. Producers Co., Davis 1	*	1870
Roeser-Pendleton, Inc.,-Humble, Morris-Buie 30, sec 201	35	1607
Root & Rhodes, Dawson 3	*	1340
Sandefer & Thompson, Alexander 2-A	35	1669
Sharrock & Elliott, Elliott 1	8	772
Ungren & Frazier, Alexander 1	190	1653
Warren & Mathews, Mathews 1	*	941
Weona Oil Co., McCassland 9-B	5	786
West Texas O. P. Co., Morris-Buie 9	180	1611
White & Duncan, Morris-Buie 5	*	1772
STEPHENS COUNTY—		
K. R. March et al, Lee 1	*	3225
THROCKMORTON COUNTY—		
C. H. Tedford et al, Eaton 1	6	396
Eaton 2	10	394

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Gulf Oil Corp., E. Cooper 15	599	3100
J. M. Huber Pet. Co., S. B. Burnett 3-R, sec 110	¶22½	2565
GRAY COUNTY—		
Drilling & Exploration Co., Inc., M. Leopold 4	142	3290
Empire O&R Co., J. G. Noel 4	674	3230
Kewanee O&G Co., Morse 8-A	203	2528
King Oil Co., Chris Baer-Gulf 3-B	482	3309
Stanolind-British American, L. Holmes 4	332	3504
Stansylvania Oil Co.-J. R. Phillips, B. E. Finley 1	162	3303
HUTCHINSON COUNTY—		
Drilling & Exploration Co., Inc., E. E. Watkins 7	483	3015
Harvester Oil Corp., W. B. Haile 4	852	3080
WHEELER COUNTY—		
North Fork Oil Co., J. H. Jackson 4	40	2320

*Failures; †Junked; ¶Million cu. ft. gas.

Paluxy Extended

SULPHUR BLUFF WELL EARNS 37-BARRELS HOURLY RATING

WEEKLY STAFF REPORT

Mount Pleasant, Texas.—Productive limits of the Sulphur Bluff field, Hopkins County, were advanced eastward by the completion of Walter L. Goldston and Frankel Brothers' H. J. Smith 2, flowing at rate of 37 barrels of 25 gravity oil per hour, based on brief test through ½-inch tubing choke from Paluxy sand section at 4420-4519 feet. The hole is bottomed at 4084 feet sub-sea. Soften sand section and more favorable porosity was logged by this fourth completion for the field in the lower section of the Paluxy pay horizon. It is 660 feet due east of the partnership's first completion on their 450-acre lease, Jas A. Craft Survey.

This new completion is credited with having cut through the fault plane in Woodbine at 3390 feet, and logged a full section of Georgetown lime, which was topped at 3630 feet, with an elevation of 435 feet. Position of the fault plane is being observed closely on all tests drilled north of the discovery site in order to project the approximate north deadline for production. Goldston and Frankel Brothers are reported to be making provisions to move in their own rotary rig in continuing their drilling program.

Two Due on Discovery Tract

Two tests drilling on Dilworth S. Hager, W. P. Luse and Russ Petroleum Company's J. E. Worsham discovery lease at Sulphur Bluff were due to reach the Paluxy section and cement casing late last week. These Dallas independents contracted to sell their allowable production for two years, and the American Liberty Pipe Line Company is preparing to build a 20-mile 6-inch welded line from the field to Talco, where connection will be made with Humble Pipe Line Company in making delivery to the East Texas field.

A 5-cent price advance posted by Humble Oil & Refining Company, effective November 1, for Talco crude, making the posting 65 cents per barrel, was immediately adopted by the Talco Pipe Line Company and the Sanders-Murchison Pipe Line Company. All three are competing for well connections. The latter is reported to have made arrangements for the movement of 25,000 barrels of storage oil via Humble Pipe Line Company's trunk line, which has a tariff of 7½ cents per

barrel, to Longview section of the East Texas field. This trunk line to Longview averaged 4327 barrels daily crude shipments during the week ending November 2. On the above date the field was credited with 104 flowing and pumping wells, with a flat allowable of 75 barrels daily. Proration quota was cut 25 barrels on the first of the month.

Production test slated for J. A. Forester et al's J. F. Woodward 1, southeastern Lamar County wildcat credited with having recovered cores bearing oil stain from Basal Trinity in drilling to 5129 feet several months ago, has been delayed by a fishing job. Casing parted near the 2700-foot level while making ready for a test.

COMPLETIONS GAIN
New field work in East Texas is slightly off

Tyler, Texas. — Completions in the East Texas field the past week recorded a slight gain, and are currently at the highest level attained within the past two months. Reports for the 7-day period show 53 completions, including 49 producers, 2 failures and 2 junked tests. New field work failed to maintain its recent gains, as a late survey shows 75 rigs in operation as compared to 90 the previous week. This decline is expected to be overcome shortly, as nearly all the majors have authorized active development programs for the remainder of the year, while independents can be counted upon to contribute a proportionate number of completions.

Independents accounted for 32 of the 53 completions last week, and 10 of their new producers required pumping equipment to take initial gauges.

GAS WELL BOUGHT
American Liberty takes over Grapeland wildcat

Palestine, Texas.—Acquisition of Ellison et al's J. E. Bean-Empire 1, wildcat gas and distillate well near Grapeland, Houston County, and supporting 1300-acre block by American Liberty Oil Company, Dallas, will result in the latter starting work shortly on the first of three contracted tests to determine if the Woodbine sand underlying this large geophysical prospect is capable of yielding oil production.

The discovery well, situated at the center of the northwest 40 acres of the Eli Steadman Survey, 1½ miles northwest of Grapeland, was completed July 14 in Woodbine sand at 6025-6037 feet through joint operations of E. A. Ellison, Paul L. McBride, Lawrence Haberle and Thornton. It is capable of producing 1000 barrels of high gravity distillate daily when the gas is allowed to produce at rate of 20,000,000 feet daily, with 1700 pounds back pressure.

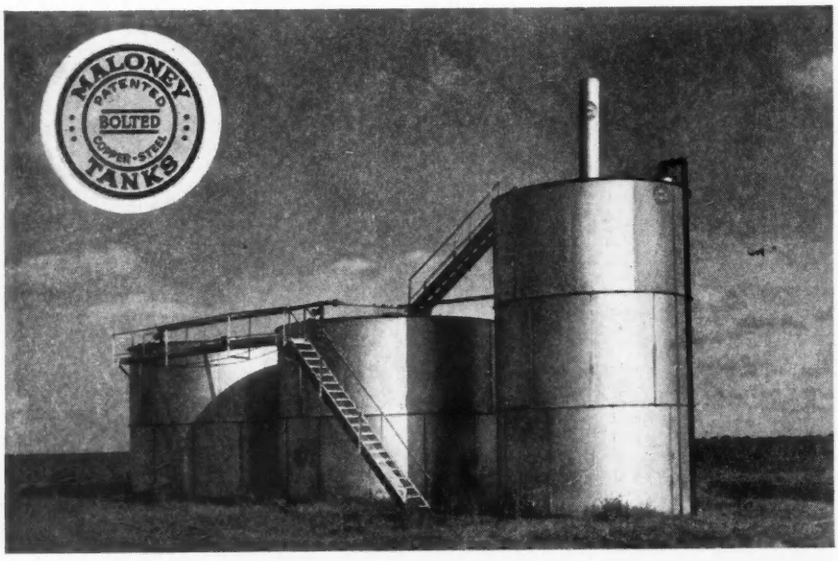
Presence of this unusual volume of distillate caused the officials of the American Liberty Oil Company to rate the area as prospective oil territory, according to reports. In acquiring the property, the American Liberty Oil Company reimburses the independents for the cost of the well, and will carry the group for one-fourth over-riding royalty interest on oil and gas production derived from the original well and the three contracted tests. When the total cost of the four wells is amortized, the independents will have the choice of continuing on an over-riding basis, else take 50-50 working interests.

In the event the projected drilling program does not yield oil production, the American Liberty Oil Company proposes to create a market for the high pressure gas production.

Austin.—The state board for leasing prison lands Friday called for bids November 25 on two tracts of prison farm lands in Brazoria County. The board offered 4285 acres out of the Ramsey Farm, near production, and 2500 acres out of the Darrington Farm, wildcat.

EAST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Ed. T. DeArman-W. R. Skeen, Crook Hrs. 6	100	3621
Gulf Oil Corp., S. P. Stone 13 (107.58-ac)	7300	3778
Harry Hanbury et al, J. H. Sharp-Ohio 14-D (19.11-ac)	210	3729
J. H. Sharp-Ohio 15 (19.11-ac)	1500	3719
Humble C. J. Thompson 22 (116-ac)	8000	3714
R. E. Kennedy et al, G. Johnson 1	90	3814
Magnolia, Ras Pool 3-B (20-ac)	5000	3740
Ohio Oil Co., Kangerga 8, Lse. 2 (65.56-ac)	3500	3648



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5. **PATENTED "CRIMP" at seams and joints. Gives accurate fit of parts. Eliminates calking stresses. Reinforces seams.**
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7. **EXTRA-DURABLE PAINTS. Tanks coated complete with red, corrosion-resisting Chromated Iron Oxide Paint. Outsides second-coated with highest grade Aluminum paint.**
8. **STAIRWAYS AND WALKWAYS. 12-gauge steel with galvanized bolts. Cantilever construction. Sectional, meet all requirements.**
9. **HEAVY HOT-DIP GALVANIZED for "sour crude" areas. 7½ lbs. galvanizing to 100 lbs. steel applied *after* fabrication. Bolts also galvanized with re-tapped nuts.**

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MALONEY TANK MFG. COMPANY
38 N. PEORIA, TULSA, OKLAHOMA

MALONEY

Company, Well and Location	Init. Prod. Bbls.	Depth
Royal Pet. Corp., E. L. Pinkston 5 (27-ac)	120	3578
J. W. McDavid 9-A (57.48-ac)	*	3567
Stanolind-Pure, W. H. Siler 62 (983.53-ac)	1200	3682
W. H. Siler 68 (983.53-ac)	7200	3622
Texas Canadian Oil Corp., M. M. Cross-Ohio 1 (19.22-ac)	2500	3680
M. M. Cross-Ohio 3 (19.22-ac)	4000	3676
Texas Gulf Pet. Co., Hodnett-Melton 17 (134.84-ac)	120	3704
Termo Oil Co. (was E. E. Coombs), F. B. Fox 9 (57.69-ac)	8000	3717
Geo. C. Walters et al, M. M. Cross-Ohio 2 (60-ac)	340	3676
KILGORE AREA—		
Perry Allen et al, C. N. Dickerson 5 (31.7-ac)	80	3565
Bass & Dillard, S. Carr 4-B (9.11-ac)	9100	3514
Thos. J. Carter et al, Cumi Wells 1 (5-ac)	50	3664
Central Commercial Oil Co., King-Shell 11 (133-ac)	1500	3722
Delta Drlg. Co., L. Crim 2 (20-ac)	700	3537
Devonian Oil Co., R. A. Matley 39 (442.1-ac)	6500	3701
H. H. Groneman & Acme Oil Co., M. Mayfield 7 (35-ac)	200	3665
P. G. Lake, Inc. (was Hunt Prod. Co.), V. E. Reid 15 (120.1-ac)	8600	3675
Magnolia, N. Radford 11 (75.05-ac)	8800	3587
Meco Prod. Co., T. Williamson 8 (150-ac)	500	3717
K. E. Merren et al, S. L. Dansby 3 (15-ac)	500	3711
Sun Oil Co., Hilburn-Loyd 25 (133.7-ac)	1500	3657
Giles E. Wimberly et al, T. H. Gill-Shell 2 (5.61-ac)	7500	3623
LONGVIEW AREA—		
Atlantic Ref. Co., W. R. Nicholson 13-A (94.6-ac)	5000	3626
Atlantic-Sun, M. Hays 74 (448-ac)	†	2100
E. B. Cox & Jake Hamon, Fee 3-B (18.17-ac)	9500	3580
Empire O&R Co., L. A. Jeter 19 (122.24-ac)	8800	3565
L. A. Jeter 20 (122.24-ac)	8500	3569
Fain-McGaha Oil Corp., W. A. Bauknight 9 (53.4-ac)	10,000	3602
Thos. D. Humphrey, F. P. Branson 8 (47-ac)	*	3672
L. & G. Oil Co., A. M. Greggston 2 (4.6-ac)	1500	3557
Marine Prod. Co., W. H. York 8 (41.4-ac)	9600	3534
Nivla Oil Corp., J. A. Morgan 4 (34-ac)	40	3705
Shell Pet. Corp., H. Hampton 22 (169-ac)	4500	3680
Sinclair Prairie, W. H. York 14 (86.45-ac)	3000	3600
Snowden-McSweeney Co., M. Bonner 9 (100-ac)	5600	3647
Southland Drlg. Co.-United E&W Oil Co., O'Byrne 33 (304-ac)	†	3500
Stanolind, M. M. Custer 9 (75.34-ac)	500	3570
M. M. Custer 10 (75.34-ac)	2500	3565
Geo. Fenton 15 (77.64-ac)	3000	3605
A. J. Tuttle 10 (95.8-ac)	5600	3620
Stanolind-Conoco-Tide Water, Flewellen 26-C (400-ac)	2500	3689
Stanolind Falcon Co., C. Everett 2-B (43.29-ac)	2500	3663
Stanolind-Tidewater, P. McGeorge 15 (95.8-ac)	8300	3495
J. H. Williams et al, E. O'Byrne 1 (40-ac)	15	3772
E. O'Byrne 4 (40-ac)	15	3721
ANDERSON COUNTY— (Long Lake Field)—		
Neversuch Oil Co., Ed. Smith 1 (53½-ac)	1800	5309
Tide Water-Seaboard Oil Corp., M. Y. Lubben 1 (72-ac)	3500	5323
FRANKLIN COUNTY (Talco Field)—		
Housh & Thompson, Inc., et al, Mrs. C. L. Owings 1 (109-ac)	600	4310
Lucey Pet. Co., A. M. Crawford 8 (25.23-ac)	840	4300
HENDERSON COUNTY (Cayuga Field)—		
Joe A. Worsham et al, G. B. W. Smith 1	2000	4098
NAVARRO COUNTY— (Corsicana-Powell Field)—		
The Girard Corp., Humphreys 35	16	1655
Spandsco Oil & Roy. Co., Kellum 2-A	5	1370
TITUS COUNTY (Talco Field)—		
B. G. Byars et al, Lucey Blackburn 1-B (16 2/3-ac)	2160	4286
Humble, Pat Davis 1 (49.8-ac)	700	4325
Magnolia, W. H. Crawford 5 (80-ac)	480	4315
K. Mainard 1 (130¾-ac)	100	4305
UPSHUR COUNTY—		
J. K. Wadley et al, R. C. Barnwell 1 (79-ac)	*	4114

*Failures; †Junked; ¶Million cu. ft. gas.

Nueces County Hot

FLOUR BLUFF TO BE SCENE OF NEXT DRILLING BOOM

WEEKLY STAFF REPORT

Corpus Christi.—The heavy development campaign in Nueces County fields remains the high spot of activity along the South Texas Gulf Coast. Completions in this county weekly double the number from the remainder of the district.

Flour Bluff, southern Nueces County, promises to be the next scene of a drilling boom. Humble Oil & Refining Company, completing 4 producers during the week, announced 4 more locations. The acreage is sufficiently divided either from a lease or a fee standpoint to show that a number of offsets are certain to be required. One well cored 67 feet of sand before reaching the water line in this 6600-foot producing area, indicating that it will be an unusually prolific reserve.

Three wells are being drilled on hot geophysical prospects south of Corpus Christi and in the general vicinity of the Flour Bluff field, none of them being to a critical depth as yet.

Saxet Lenses Widened

In Saxet field, sand lenses in the various levels continue to be slightly widened. In much of the field, the richness of several sands has brought the drilling of many twin wells. To the east of this field and midway between it and Saxet Heights field, Barnsdall Oil Company's deep test on the Weil tract is coring below 7502 feet.

Eleanor Oil Company's Kline 1, 2½ miles southeast of Gregory in San Patricio County, again becomes very interesting with work resuming to deepen from present depth of 6681 feet to 7500 feet in the Frio. A series of tests in sand at 6270-6436 feet failed to materialize despite showing of oil.

Hooper & Rutherford's Willis 1, a direct east offset, is a closed well but is known to be drilling below 5000 feet.

Callaway et al's White Point Development Company 1, which attempted to establish 4900-foot oil production in the White Point field, San Patricio County, swabbed a little oil and salt water at 4911 feet and is coring deeper.

Continental Oil Company apparently has decided to give up its fourth heaving shale job in Calhoun County. Austin 1, one mile north of the first three tests, is cutting out and pulling 6-1/8-inch casing in sidetracked hole at 8683 feet. It drilled to 8825 feet in the original hole, but plugged back and whipstocked.

Drilling Campaign Anticipated

An immediate drilling campaign to the 5300-foot sand in the Bentonville-King district of Jim Wells County is anticipated as a result of the announcement of a pipe line outlet for the field. At present the area's outlet is solely through trucks or loading rack at Bentonville. The allowable at this time is rather limited, but with the building of the line and the drilling of additional wells, it is likely that it will be a rather important producing area. More than a mile southwest of the field, Tom Graham's Luby 1, Share 4, drilled to just below 5500 feet, plugged back and perforated at 4026-31 feet, where it was completed as a gasser with 1700 pounds pressure.

Plymouth Oil Company hit a bit of hard luck with one of its deep wildcats in northern Victoria County. J. J. Welder 1 stuck drill stem at 6590 feet and efforts thus far have failed to recover it. R. H. Welder 1 is making hole near 5000 feet.

Fault Zone Active

NEW LOCATIONS FOR AUSTIN CHALK TESTS ANNOUNCED

San Antonio.—Shallow Austin chalk development along the South Texas Balcones fault zone showed a further increase during the week with many new locations announced in fields along trend. Several wildcats in this area are showing oil in the base of the Taylor marl and at the top of the Austin chalk, where completions are being attempted.

South Darst Creek field, Guadalupe County, discovered last year, gives

promise of being a new hot spot of activity. The tracts are rather well broken up and held by a number of independent operators. With several outpost wells started and more inside locations staked, the possibilities of this area should be known within a few days.

This area is one of several now receiving a revived drilling campaign. Branyon in Caldwell County is the most outstanding, where 6 rigs are running. Dunlap, Salt Flats, Lytton Springs, Zoboroski and others again report from 1 to 3 rigs active.

Three Guadalupe County wildcats are testing oil shows in the base of the Taylor and at the top of the Austin chalk. Culver and Kreiter's Vorpahl 1, Edwards Survey, 9 miles northeast of Lavernia, drilled to 2525 feet, 9 feet in the Edwards lime, where it encountered oil stains and sulphur water shows. It will set casing at 1910 feet to test a showing of oil at 1910-34 feet. E. P. Hynes' Linne 1, A. Reese Survey, topped Austin chalk at 1538 feet, drilled to 1704 feet and acidized. It is preparing to test after recementing casing. Riddle Oil Company's E. Nolte et al 1, J. Sowell Survey, 6 miles east of Seguin, is acidizing at 1880 feet after topping saturation at 1740 feet in a sidetracked hole. Top of the Austin chalk is 1790 feet.

Rogers and Rogers' B McLain 1, more than one mile south of the producing area in Somerset field, Atascosa County, is being put on the pump after showing for an oil producer in the Taylor at 1998 feet. It had a section of sand and sandy shale between 1620-75 feet, carrying oil. The test is 150 feet from the north line and 450 feet from the west line of the B. McLain 84.8-acre tract in the V. Trevino Survey, and 1 location east of the Somerset-Central Syndicate's abandoned well. The abandoned test likely will be reworked and put on pump.

Amerada Petroleum Corporation is preparing to commence another deep test in Pearsall field of Frio County. Halff and Oppenheimer 8 will be drilled 1500 feet from the south line and 1700 feet from the east line of the San Antonio Ditch Company Survey. In the same area, this company is drilling at 4950 feet in Halff and Oppenheimer 7, a deepening job.

RIO GRANDE QUIET

Two wildcats are started on Alta Mesa salt dome

Mission.—No startling developments were recorded in the Rio Grande Valley sector of South Texas during the week. Brooks County has 2 wells reaching interesting stages to replace the several in Hidalgo and Starr counties abandoned during the week.

The California Company's Mestina Oil & Gas Company 1, Salinas Survey, Brooks County, several thousand feet northwest of Garcia 1, the discovery producer, is coring below 2250 feet, expecting to pick up the producing sand shortly. The tests are on the Alta Mesa salt dome prospect. Nine miles west of Falfurrias and in the same county, Magnolia Petroleum Company has progressed to below 4565 feet in Ed. Lasater 1, having cored several salt water sands at shallower depths.

Over in Starr County, John Clopton's Tijerina 1, 4500 feet northwest of Rio Grande City field, has been abandoned at 1720 feet. D. D. Oil Company's Kelsey Bass 1, 2 miles west of the Barbacoas field, has been abandoned at 6015 feet.

H. J. Porter et al's Sweeney Estate 1, 6 miles southwest of Donna in Hidalgo County, stuck drill stem in the hole at 5260 feet. The rig has been skidded 60 feet to the southeast and another well is being started to be carried to at least 6000 feet.

SEARCH RESUMED

Mirando District revival stretches over wide area

Laredo.—Resumption of wildcatting in Mirando District returns interest to this important South Texas producing area. The new work is rather general, extending from the shallow areas of Zapata County to the deep sectors of eastern Duval County.

This campaign is expected to be further increased as a result of the increase in crude oil prices in this district. Field allowables have been materially reduced, hence it is not likely that the increased price will have a material effect on the activity in the proven areas. Present field work at this time is mainly an orderly development of leases.

PETTUS TESTS DRY

Two trend locations help offset several failures

Beeville. — Several more wildcats were removed from the active list in the Pettus district last week, while locations have been made for a couple more.

R. H. Feltner et al's Sanger Ranch 1, Section 391, in the southwestern portion of Live Oak County, was abandoned at 3570 feet after topping the Pettus at 3433 feet.

To offset this failure, two rather important locations have been announced. One is Ohio Fuel Oil Company's H. J. Rosebrock 1, L. Romero Survey, on the east side of the Oakville shallow gas field. Several months ago a gasser was completed in the Pettus sand in this field and this new well will be drilled to the same horizon in an effort to develop oil production. Another location is Randon Oil Company's George West 1, which is to be drilled about 3 miles west of George West.

Over in Bee County, a couple of outpost wells further defined fields. Humble Oil & Refining Company's Jane E. Yoward 1, on the northwest side of Voss field, topped the Pettus sand at 3978 feet, and showed a little salt water and oil at 4107 feet, where it was stopped. On the northeast side of the Pettus field, United Production Corporation's G. A. Ray 54 has been abandoned at 4008 feet, where it showed 175 feet of salt water in 15 minutes.

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Humble, Yoward 1, C. B. Shanin sur, Ab 295 (Voss)	*	4107
United Prod. Co., G. A. Ray 54, W. A. Moore sur (Pettus)	*	4008
BEXAR COUNTY—		
Eckert & Son, Meyer 1, 1000 ft nl, 600 ft el, 100-ac tr Morales sur, 4 mi n Eckert field	*	1437
CALDWELL COUNTY—		
Adams & Lyles, Ellison 2, Dillard Cooper sur (Braynon)	60	2175
DUVAL COUNTY—		
Bridwell Oil Co. et al, Robles 1, 330 ft sl, 330 ft wl sur 68, ½ mi e of n end field (Hoffman)	120	2825
Cox & Hamon, Peters 8, sec 322 (Lopez)	360	2110
Peters 10, sec 322 (Lopez)	600	2144
Peters 20, sec 322 (Lopez)	400	2125
Peters 26, sec 322 (Lopez)	280	2137
Peters 31, sec 322 (Lopez)	240	2149
Frank J. Gravis, Gravis et al 2, 990 ft swl, 3050 ft sel, sur 250, 10 mi sw San Diego	*	5454
Humble, Bradgley 6, sur 307 (Seven Sisters)	875	2500
Hubberd 57-B, sur 72 (Loma Novia)	365	282
Welder Heirs 14-C, sur 554 (Loma Novia)	435	2721
Smith 33, sur 382 (Seven Sisters)	555	2463
Smith 34, sur 382 (Seven Sisters)	550	2469
Illinois Petr. Co., A. Hazelwood 10, sur 110 (Seven Sisters)	*	2519
C. W. Miller 1, 600 ft sl, midway between e and wl of 35-ac tr, sur 55, ½ mi nw Loma Novia prod (Gov't Wells)	¶40	2450
Magnolia, Benavides 14, O'Hern & Seacord sub (Cole)	290	2866
M. G. Peal 21, sec 383 (Lopez)	500	2147
Reliance Oil & Refg. Co., Drummond 14, G. C. & F. sur (Seven Sisters)	190	2503
Rogers & Rogers, de Pena 3, El Mesquite Gr. (Mesquite)	*	3002
Rosan Oil Co., Hubberd 3-A, AB&M sur (Loma Novia)	350	2810
Shell, Bishop Cattle Co. 8, sur 59, (Loma Novia)	460	2574
Southwest Prod. Co., Luptack 3, sur 41 (Gov't Wells)	¶10&50	2413
Wellington Oil Co. & Henderson, Welder Heirs 11-C, sec 381 (Seven Sisters)	385	2407
Westheimer & Daube, Campos 18, sur 224 (Seven Sisters)	*	2779
FRIO COUNTY—		
Thornton Davis et al, Halff & Oppenheimer 1, 1350 ft wl, 330 ft sl of John D. Clare sur 336, 1 mi ne chalk prod (Pearsall)	250	5618
GOLIAD COUNTY—		
Magnolia, Weldon & Lackey 4, J. Gomez sur (North Pettus)	480	3695
GUADALUPE COUNTY—		
W. C. Campbell et al, Lay 1, J. K. Davis sur No. 12 (South Darst Creek)	50	2470
JIM HOGG COUNTY—		
Henry Swift, Holbein, Sr., 1, blk 58, sec 3, Las Animas Gr, nw portion county, 1 mi nw of Darby test	*	3516
JIM WELLS COUNTY—		
Tom Graham, Luby Estate 1, 330 ft nl 2092.5 ft el & wl of sh 4, Los Presnos de Abajo Gr, 5 mi nw Alice (Bentonville)	¶40	5510
LIVE OAK COUNTY—		
R. H. Feltner et al, Sanger Ranch 1, 990 ft sl, 330 ft el of w/2 of GC&SF sur 391	*	3570
Maryland Oil Corp, West Est. 1, 1320 ft sw, 660 ft se of w/cor of lot 399, Fernandez & Vaughn sur, 5 mi sw Geo. West townsite	*	4265
McMULLEN COUNTY—		
C. G. Grimes, Trustee, Pursch 1, 330 ft nl, 330 ft el, 160-ac lse, sur 116, 1 mi n Seven Sisters	*	2646
Loma Oil Co., Jacob Corp. 46-A, W. R. Jacob sur No. 10 (Jacob)	15	947
Jacob Corp. 10-F, J. Fadden sur (Jacob)	50	910
Joe Pickett, Pickett 1, 2400 ft el, 200 ft nl, 1371 ft easterly wl, 245.5-ac tr, M. Hely sur (Callihan)	¶2	1024
Reynolds & Richardson, Shiner Estate 1, 330 ft el, 375 ft sl of w/2 sec 83, Shumway subd, sw 23, 16 mi s Callihan	*	3154

*Failures; †Junked; ¶Million cu. ft. gas.

Company, Well and Location	Init. Prod. Bbls.	Depth
NUECES COUNTY—		
Mills Bennet, Kassner 3, BS&F sur (Saxet)	675	4094
Ordner 2, sur 410 (Saxet)	*	4226
W. C. Brady, Simonton 1, Country Club Place (Saxet Heights)	150	4084
R. B. Bryant, Davis & Alton 1, lots 48 and 66, Country Club Place (Saxet Heights)	480	4081
Cox & Reed, Lawrence, Villareal Gr (Saxet Heights)	400	4069
J. K. Culton, Baldwin 7, blk 19, Russel Farm lots	390	4083
W. B. Hinton, Cole 3, Villareal Gr (Saxet)	70	4887
Humble, Edwards 1, Flour Bluff & Encinal Gardens Tr.	600	6657
Phillips 1, lot 8, blk 48, Flour Bluff & Encinal Gardens Tr. (Flour Bluff)	600	6661
Rankin & Oliphant 1, lot 27, blk 47, Flour Bluff & Encinal Gardens Tr. (Flour Bluff)	600	6662
Robertson 1, center lot 23, blk 47, Flour Bluff & Encinal Gardens Tr. (Flour Bluff)	600	6680
Pedernal Oil Co., McCaughn 1, blk 17, Oak Park Addition	115	4089
Republic Natural Gas, Dunn 14, Franks Farm lots, blk 37 (Saxet)	620	5828
Southern Minerals Co., Bliss 17, Stevens sur (Saxet)	540	5832
Texon Drlg. Co., Ocker 4, sur 402 and 316 (Saxet)	500	4446
W. A. R. Oil Co., Buckholt 2, Kinney sur (Saxet)	640	4447
Wellington Oil Co., Sevier 6, Wm. Gamble sur (C. Driscoll)	795	3812
HIDALGO COUNTY—		
Gem Oil Co., Seabury et al 4-A, sh 256, porc 38-39 (Samfordyce)	300	2793
Harrison-Danvers, Guerra 1-B, sh 251, porc 38 (Samfordyce)	350	2961
H. J. Porter et al, Sweeney Estate 1, 982 ft nl, 330 ft wl, of lot 1, Wayne Wood subd No. 1	*	5260
SAN PATRICIO COUNTY—		
Atlantic, Pullin 1, lot 4, blk 1, 2nd add Taft Farm lands (Taft)	415	4000
Humble, Mayo 10, Ottman sur (Taft)	*	4937
Sun, Rountree 2, 159.81-ac tr (Plymouth)	*	6010
STARR COUNTY—		
John H. Clopton, Tijerina 2, I. of Camargo, 150 ft sl, 150 ft wl, lot 14, sh 14-C	*	1720
D & D Oil Co., Kelsey-Bass 1, 1534 ft sl of n 585 ac, 2856 ft wl Davenport subd of porc 86 and 87	*	6015
Fech Oil Co., Doyno 11, Porc 81 (Rio Grande City)	50	1437
VICTORIA COUNTY—		
Greenland Oil Co., Mikeska, J. M. Brownson sur (Placedo)	450	4776
WEBB COUNTY—		
Howard et al, Frost Nat'l Bank 1, 330 ft sl, 330 ft el n/2 sur 733	*	2051
Mortimer & Springer, Lopez 9, sur 73 (Lopez)	575	2190
Vela 9, sur 114 (Lopez)	575	2223
H. E. Nessly, Bruni 2, sur 449, 1981 ft sl, 330 ft wl of sur 449	*	3510
Porter & Blanchard, Benavides 5, [illegible] (Cole)	575	2930
Smith & Hamill, Benavides 1, Mariano Arispe Gr (Cole)	*	Ion.
ZAPATA COUNTY—		
Ferry & Curry, Trevino r, Randado Gr (Charco Redando)	3	238
Gilcrease Oil Co., Haynes 13-B, Comitas & Villa Gr (Comitas)	5	933
J. B. Nash, Trustee, Haynes 25, Haynes subd (Comitas)	40	1017
Frank Schneider, Garza 2, Comitas Gr (Escobas)	50	1211
United Prod. Corp., Haynes 1, Las Comitas Gr (Comitas)	35	1013
Upchurch & McKay, Haynes 13, Comitas Gr (Comitas)	40	1031

*Failures; †Junked; ¶Million cu. ft. gas.

CAYUGA ORDER

Austin.—The Texas Railroad Commission has issued an order effective November 1 providing for a maximum gas-oil ratio allowance of 5000/1 for wells in the Cayuga and Long Lake fields.

At a recent hearing before the commission, operators unanimously approved such a rule and asked that the commission abandon the rule then in effect which limited the ratio to 2,000/1. It was contended that many of the wells could not comply with the former regulation.

Watch Three Wells

LOCHRIDGE, HOUSTON AND MAGNET TESTS PROMISING

WEEKLY STAFF REPORT

Houston.—Attention of Gulf Coast operators was focused on Gulf Oil Corporation's Wilkes & Smith 2 on Lochridge prospect, Brazoria County, Stanolind Oil & Gas Company's Candelari 1 on Clinton prospect, Harris County, and P. B. Watson's Sweet 1 in the Magnet area, Wharton County, at the end of the week. The first mentioned well may open a new oil field. The second test was showing the highest pressure of any well in the world, and the third wildcat blew out and caught fire.

Gulf Oil Corporation's Wilkes & Smith 2, J. W. Hall Survey, was waiting on cement to set at 6366 feet after plugging back from 6456 feet, where a drill stem test showed 5500 feet of salt water in 20 minutes through two ¼-inch chokes. No pressure was recorded while making the drill stem test. A previous drill stem test was made at 6347 to 6385 feet through two ¼-inch chokes, and in 15 minutes the well started flowing oil with a pressure of 85 pounds. The first sand encountered in Wilkes & Smith 2 was at 6250 feet, and on drill stem test from 6318 to 6366 feet it made 4000 feet of 27 gravity oil with a 100-pound pressure through two ¼-inch chokes in 10 minutes.

Wilkes & Smith 2 is the third wildcat in which Gulf Oil Corporation has tested the Frio formation in the Lochridge area. The second well established the prospect as a gas producing area.

Evidence that Wilkes & Smith 2 would open a new field at Lochridge was confirmed by Gulf Oil Corporation announcing two new locations in the area.

F. Reiss 1, 1161 feet east along the north line from the northwest corner of a 525-acre tract, thence 330 feet south at right angles in the J. W. Hall Survey, Abstract 58, is an offset to Wilkes & Smith 2. K. M. Gibson 1 is 1853 feet north along the west line from the southwest corner of lease, thence 363 feet east at right angles in a 200-acre tract, or 1853 feet north and 330 feet east from the southwest corner of the J. W. Hall Survey.

Distillate at Clinton Prospect

On the Clinton prospect, east of Houston, Stanolind Oil & Gas Company's Candelari 1, Reels & Trobough Survey, was making around 10,000,000 cubic feet of gas daily along with approximately 120 barrels of 48 gravity distillate at 8101 feet. Tubing pressure was 3300 pounds and casing pressure was 2800 pounds. The gas/oil ratio was 83,000 to 1. The well is producing through two bleeder lines with ¼-inch chokes. One of the lines is connected to a separator and the other is feeding a flare. On November 3, 1936, the well was shut in and had a pressure of 4800 pounds on the drill pipe and from 1500 to 1700 pounds on the casing. It was opened and showed a pressure of 3300 pounds on the drill pipe and 1500 pounds on the casing.

It was first reported that Candelari 1 was producing from Cockfield formation, but a new theory advanced by several geologists is that the well is producing through a cavity from sands approximately 3000 feet deeper. However, this is just a theory. It is known that the mud in the hole disappeared when the well blew out, and no mud was in evidence when it was blowing gas and distillate. It is reported that Stanolind Oil & Gas Company had ordered two 15,000-pound test gate valves for the next well and that a local manufacturing company is making these valves.

When Candelari 1 blew out it was in a shale formation at 8101 feet. It registered a pressure of 5100 pounds, the largest pressure on any well in the world.

It is generally believed the company will complete Candelari 1 at its present depth, as it would be dangerous to work the well over. Special connections will be fitted on the well to guard against future blowouts.

Magnet Test Blows Out

One week after the above test blew out, P. B. Watson's Sweet 1, east offset to Texas Crusaders Oil Company's Fee 1, at Magnet, Wharton County, blew out when coming out of the hole at 5488 feet. Around 24 stands of drill pipe were left in the hole and after the well blew for several hours it caught fire. It finally extinguished itself. Later the test started blowing again and was killed by stabbing the 4-inch drill pipe. When the well caught fire it ruined the derrick and part of the draw works. At the end of the week the crew was waiting for a new rig to complete the well. At 5488 feet, Sweet 1 tapped a new gas sand for the Magnet area.

Texas Crusaders Oil Company's Fee 1, west of the above test, was making around 125 barrels of net oil and 150 barrels of salt water daily from perforated casing at 5551 to 5560 feet in the Frio formation.

A new gas and distillate sand was discovered in Orchard field, Ft. Bend

County, last week by Gulf Oil Corporation. Moore 46 was drilled to 7892 feet, and after trying to run a string of 5-inch casing to the bottom it was stuck at 6954 feet. The crew set 20 feet of screen from 6955 to 6975 feet, 8 feet from 6987 to 6995 feet, and 6 feet of screen from 7040 to 7117 feet. Including the blank and packers there was over 337 feet of setting connected to the 5-inch casing. The test came in making 42 barrels of 53.6 gravity distillate through a 3/16-inch choke. Tubing pressure was 2700 pounds; casing pressure, 1150 pounds. Heretofore, the field has been producing from the Middle and Lower Oligocene sands at 2685 to 4150 feet, exclusive of a little production from the cap rock formation. Production was established in the Upper Saline Bayou formation from 6675 to 6690 feet in 1935. It is understood that the operators have filed for a permit to drill a well to 10,000 feet at Orchard.

In Gillock field, southwest of Dickinson field, Galveston County, Humble Oil & Refining Company completed Maco Stewart A-11, W. K. Wilson Survey, for 9 barrels per hour through a ¼-inch choke. The hole was drilled and cored to 8766 feet in hard sand. Broken sand and shale showing oil was found from 8625 to 8671 feet. Seven-inch casing was cemented at 8758 feet and perforated with 9 shots from 8668 to 8672 feet in the Frio formation.

Pan-American Production Company's Craig 2, W. K. Wilson Survey, was running an electrical logging device last week at 8618 feet in hard sandy shale. Sand showing oil was cored from 8580 to 8590 feet, and from the latter depth cores were missed until 8610 feet. Then sandy shale was cored to 8618 feet.

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Hastings Field Extended

Hastings field, Brazoria County, was extended one location northwest last week when Humble Oil & Refining Company finaled Brown 4 in the W. H. Snyder Survey at 6075 feet, flowing 14 barrels per hour through ¼-inch choke.

Offsetting Walter Gholston's Fee 1, recent northwest extension test, Stanolind Oil & Gas Company's R. O. Surface 1 was completed as a producer at 6080 feet in the Lower Marginulina-Frio formation. The test made 503 barrels in 22 hours through ¼-inch choke, with a tubing pressure of 926 pounds and a casing pressure of 1650 pounds. Seven-inch casing was cemented at 5996 feet. Stanolind also completed Ford 6. It made 590 barrels daily through ¼-inch choke from 6080 feet.

The second independent operator to enter the Hastings field is the firm of Showers & Moncrief, which made location for Hughey 1 in the center of a 10-acre tract, being tract 18 of the H. & T. B. Survey, Section 29.

Approximately 8000 feet west of Pickett Ridge field, Wharton County, Texas Crusaders Oil Company's Kaubbla 1, G. C. Gufford Survey, was shut down waiting on orders at 4572 feet after making a drill stem test. The test was drilled to 4848 feet in the Frio formation and plugged back to 4541 feet. A drill stem test from 4541 to 4572 feet in 9 minutes through two ¼-inch chokes showed 390 feet of fluid, 25 percent oil and 75 percent mud. A pressure of 250 pounds was recorded.

On the north side of the Manvel field, Brazoria County, Burton Drilling Company completed Baldwin 1 for 525 barrels daily through ¼-inch choke from 4059 feet.

On the southeast side of Mykawa field, Harris County, West Production Company abandoned Minetex 1, Wm. Lovett Survey, at 7178 feet in heaving shale. The well was projected to 10,000 feet, but could not overcome the heaving shale so it was abandoned.

South Houston Outpost Produces

East of production at South Houston, Harris County, Stanolind Oil & Gas Company completed Holland & Price 3, in Tract 28 of the Jones Subdivision, for 390 barrels daily through ¼-inch choke with a tubing pressure of 440 pounds and a casing pressure of 420 pounds. The well was completed at 4775 feet. E. H. Shower's Tate 1 was completed last week, making 515 barrels daily through a ¼-inch choke with a tubing pressure of 600 pounds and a casing pressure of 650 pounds. Location has been made for Tate 2 in block 154 of South Houston Gardens No. 6.

Humble Oil & Refining Company is clearing a 10-acre tract for a gasoline cracking plant in Tomball field, Harris County. Contract has not been let for the plant. The company has a number of gas wells at Tomball and considerable gasoline can be obtained from the wet gas.

Double Cotton Lake Extension

Cotton Lake field, Chambers County, was extended northeast by Glenn H. McCarthy and south by Humble Oil & Refining Company last week.

McCarthy's Kilgore 4, J. Townsend Survey, made 24 barrels per hour through ¼-inch choke. Clean oil sand was from 6290 to 6295 feet and 5¼-inch casing cemented at 6290 feet. The well came

in flowing through a ¼-inch choke with a tubing pressure of 1600 pounds and a casing pressure of 1200 pounds. The operator has made location for Kilgore 5, 1399 feet west of the east line and 1932 feet northwest of Kilgore 4 and in the J. Townsend Survey.

Humble Oil & Refining Company's Howard 1, south of the discovery well at Cotton Lake, was making 4 barrels per hour at the end of the week. The well was completed at 6291 feet in the Marginulina formation. The casing was perforated with 8 shots from 6288 to 6290 feet. A drill stem test from 6264 to 6290 feet in 19 minutes showed 670 pounds pressure and 23 stands of oil. The test was made through ¼-inch choke. The 2½-inch tubing was hung at 6190 feet.

Anahuac Flank Test Fails

Approximately 5000 feet east of production at Anahuac field, Chambers County, Humble Oil & Refining Company abandoned Middleton C-1, H. & T. C. Survey, Section 88, in Frio formation at 7450 feet after coring salt water sand from 7410 to 7449 feet. Salt water sand was also cored in the Marginulina formation from 7216 to 7225 feet. On the southeast side of the field, Humble completed Middleton 24, H. & T. C. Survey, Section 58. The well made 28 barrels per hour through ¼-inch choke from 7085 feet and its Middleton 20 was completed at 7103 feet, flowing 27 barrels per hour through ¼-inch choke.

Sun Oil Company made location for M. White 2 on the northwest side of the field last week. The test is 467 feet west of the east line and 1325 feet north of the south line of the lease in the J. McGahey Survey.

In the southeast corner of Polk County, J. K. Dorrance made location for S. Wings 1, 600 feet south at right angles to north line of I. & G. N. Survey 15, Abstract 713, and 230 feet from the east line of a 285-acre tract, or 5350 feet west along the south line of the survey from the southeast corner, thence 250 feet north at right angles.

Normandie Oil Corporation's Prutzman 1, H. Williams Survey, Amelia field, Jefferson County, was completed as a dry hole last week when it was plugged at 6927 feet. After perforating casing from 5928 to 5931 feet mud was swabbed. The operators again perforated casing from 3050 to 3060 feet and swabbed salt water.

Glenn H. McCarthy's Longe 1-A, on the north side of the Amelia field, was waiting on cement to harden at the end of the week at 6107 feet. Five and one-half-inch casing was set at that depth.

On the Seabreeze prospect in Jefferson County, Sun Oil Company was running 9⅝-inch casing to 8110 feet to make a production test after coring broken sand and shale showing gas down to 8335 feet.

On the northwest flank of Orange field, Orange County, Turnbull's Lutcher Moore 1, J. Dyson Survey, was making a production test at the end of the week at 7096 feet. Seven-inch casing was set at 6975 feet and sand tested is from 6941 to 6952 feet. If this sand does not prove productive the operators will perforate casing at other sands which looked encouraging on an electrical logging device.

Clay Creek to Swab Again

Sun Oil Company's Lauter 1, southeast flank of Clay Creek field, N. Clay Sur-

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
AMELIA—		
Normandie Oil Corp., Prutzman 1..	*	6927
ANAHUAC—		
Humble, Middleton 20	648	7103
Middleton 24	672	7085
Middleton C-1	*	7450
BARBERS HILL—		
Stanolind, Chambers 21 (wo)	206	4475
Texas Gulf Prod. Co., Barber 3-B (wo)	250	4030
BIG CREEK—		
Gulf, Davis 71	240	4365
CONROE—		
Humble, Bailey 1-B	1704	5164
COTTON LAKE—		
Glenn H. McCarthy, Kilgore 4	576	6290
DICKINSON—		
Humble, Maco Stewart A-11	216	8766
HASTINGS—		
Humble, Brown 4	336	6075
Stanolind, Ford 6	590	6080
Surface 1	552	6080
HULL—		
Houston Prod. Co., Baldwin B-2	340	5146
MANVEL—		
Burton Drilling Co., Baldwin 1	525	4059
MYKAWA—		
West Prod. Co., Minetex 1	*	7178
ORCHARD—		
Gulf, Moore 46	45	7892
SOUTH HOUSTON—		
E. H. Showers, Tate 1	515	4770
Stanolind, Holland & Price 3	391	4775
J. C. Kelly 1	408	4775
TOMBALL—		
Shell, Tyson 1	336	5568
Humble, Briggs 1	528	5558
Paterson 1	225	5566
BURLESON COUNTY—		
M. R. Exploration Co., Fontaine 2, Wm. Raleigh sur	*	6500

*Failures; †Junked; ¶Million cu. ft. gas.

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vey, Washington County, was preparing to swab at the close of the week at 7462 feet. The previous week swabbing at 7474 feet showed 3600 feet of salt water. The hole was then plugged back to 7435 feet and cemented was drilled out to 7460 feet. Two and a half-inch tubing was run to 7424 feet. The swab was run down to 6700 feet and the well showed a little oil and gas. Tubing was pulled and the hole was carried down to 7461 feet. After swabbing was resumed it showed a little oil and gas again. No salt water was shown while swabbing. At the end of the week the Lauter 1 was cored one foot deeper to 7462 feet.

On Garwood prospect in Colorado County, Sterling Oil & Refining Company's South 1 perforated casing from 6113 to 6115 feet with 12 shots and made a drill stem test from 6097 to 6127 feet. The operators recovered 63 thribbles of salt water. The crew will plug back and perforate again.

21 LOUISIANA PERMITS

Shreveport.—Twenty-one drilling permits were authorized last week by the minerals division, Louisiana Conservation Commission. Eleven were in North Louisiana, all in Caddo Parish. Six were in Rodessa. The 10 in south Louisiana were divided among the following parishes: Acadia, 1; Calcasieu, 2; Cameron, 3; La Fourche, 1; St. Landry, 1; St. Martin, 1, and St. Mary, 1.

Tepetate Active

OTHER DEVELOPMENTS ON GULF COAST ARE ROUTINE

Lake Charles, La.—Louisiana's Gulf Coast remained quiet, with most of the activity centering around Tepetate field, Acadia Parish, where several new locations were staked and wells were at completion stage. A new wildcat location on Valentine prospect in La Fourche Parish also attracted attention.

On the northeast side of Tepetate, Continental Oil Company was waiting on cement to set in Veronie 1, Section 28-7s-2w, after running a string of 5¾-inch casing 8307 feet to bottom of the hole. If the well is a commercial producer it will extend production at Tepetate northeast.

The same company's Homeseekers 7-A, on the northwest side of Tepetate, Section 29-7s-2w, was drilling in sandy shale at 8493 feet at the end of the week after missing the regular sand found around 8300 feet. A gas sand, however, was logged at 8260 feet on an electrical logging device.

West of production, Continental's Young 1-A, Section 29-7s-2w, was being washed in at the close of the week from Marginulina-Frio sands at 8310 to 8317 feet. A gas sand was logged at 8294 feet. A string of 5¾-inch casing was cemented at the bottom of the hole and slotted pipe was run.

The company made locations for 3 flank tests on the north and west sides of the field. Homeseekers C-1, north flank, is 330 feet north and 660 feet west of the southeast corner of Section 22-7s-2w; O. Young 1 is 1550 feet south and 660 feet east of the northwest corner of Section 29-7s-2w, and Young 1-B is 330 feet south and 660 feet east of the NWc SW¼ of Section 29-7s-2w. The latter two locations are on the west flank of Tepetate.

To Drill at Valentine

Pan American Production Company announced a location for Valentine prospect in La Fourche Parish. Harang 1 is 2600 feet north, 80 degrees, 20 minutes east of Barnsdall Oil Company's Harang 1, being in section 7-17s-20e. Derrick foundations are being built.

Valentine prospect is an old geophysical prospect of Gulf Refining Company. Due to surface conditions and slight showings of oil in early shallow wells, Barnsdall Oil Company was influenced to shoot the region with reflection seismograph in 1932. Three tests were drilled by Barnsdall Oil Company and each was dry. One stopped in salt, which proved the Valentine prospect as a salt dome. The operator's Harang 1 was drilled to 7195 feet and encountered sands showing oil from 4630 to 6449 feet and a gas sand from 6614 to 6624 feet.

After operations ceased in the area, Pan American Production Company shot the area with geophysical instruments and leased around 2000 acres. It is reported Barnsdall Oil Company owns half the minerals under the Valentine prospect. Gulf Oil Corporation has considerable acreage surrounding the east bank of Bayou La Fourche.

East of New Orleans, John Cartwright's Nunes 1, Section 10-13s-12e, was shut down at 6477 feet in water sand. An electrical logging device showed 5 ohms resistivity and 120 milivolts porosity around 5500 feet. Several water sands cored in Nunes 1 did not appear encouraging.

Deep Test Running Casing

Shell Petroleum Corporation's Sturdevant 1, South Roanoke prospect, Section 25-10s-4w, Jefferson Davis Parish, was running a string of 7-inch protection casing to 9749 feet at the end of the week. It is believed the operators will drill the test below 10,000 feet. If no new sands are found below the 10,000-foot mark, Sturdevant 1 will be plugged back and upper sands will be tested.

On the South Jennings prospect, Jef-

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Rodessa—Monroe—Cotton Valley
Turnertown—Greggton—Houston

ferson Davis Parish, Stanolind Oil & Gas Company's Calcasieu National Bank 1, Section 15-10s-3w, was plugged back for the fourth time the past week. The test is now waiting on cement to set at 8600 feet. While drilling at 9007 feet the test ran into the old hole. The new hole will be sidetracked and carried down to 10,000 feet, contract depth, and if no new sands are encountered the operators will make a series of tests where sands have been cored above.

On the southeast side of English Bayou field, Calcasieu Parish, Fohs Oil Company was waiting on cement to set in Castle 15, Section 13-9s-8w, after coring oil sand from 7033 to 7045 feet and setting 7-inch casing at 7070 feet. The operators will perforate casing and make a production test.

Union Sulphur Company's Kaufman 3, Section 13-9s-8w, was coring in sandy shale at 7360 feet having had 2 feet of sand with an odor of oil from 7066 to 7068 feet. On the west side of English Bayou, Fohs Oil Company made location for A. Powers 3, 330 feet south and 250 feet east of the NWc NE SW Section 14-9s-8w.

Bayou Blue

At Bayou Blue in Ibberville Parish, Humble Oil & Refining Company's Wilbert 1, Section 67-9s-11e, on a drill stem test made in 12 minutes from 2043 to 2080 feet, showed 2 thribbles of mud and 8 thribbles of salt water through 2 ¼-inch chokes. A sand showing oil was encountered at 1668 to 1670 feet and from 1740 to 1741 feet. A shale and shell formation showed a slight odor of oil at 1779 to 1782 feet. At the close of the week the operators were drilling below 2500 feet in soft mud.

Magnolia Petroleum Company's Raymond Le Bleau 1, Section 13-12s-9w, Big Lake area, Cameron Parish, was fishing for drill collar at 6803 feet at the end of the week. A sand with a gas odor was cored from 6397 to 6403 feet and one with an oil odor was encountered from 6778 to 6782 feet.

Barnett Petroleum Corporation made location for a wildcat in East Feliciana Parish last week. Tullas 1 is 13,750 feet south and 1800 feet west of the northeast corner of Section 34-2s-1w.

SOUTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CAILLOU ISLAND—		
Texas Co., Caillou Island 39	*	4432
Caillou Island 45	1733	3879
CAMERON MEADOWS—		
Magnolia, Cameron Meadows 18	250	3437
EAST HACKBERRY—		
Texas Co., East Hackberry 10	*	6683
GARDEN ISLAND BAY—		
Texas Co., State Garden Island 13	*	lcn.
JEANERETTE—		
Herton Oil Co., Carter 2	*	7611
JENNINGS—		
Lake City Oil Co., Jennings Heywood 1	15	1866
Stanolind, Houssiere Latrielle 17	226	7248
ENGLISH BAYOU—		
Fohs Oil Co., Powers 2 (wo)	503	7070
Wasey 2 (wo)	292	7075
LAKE BARRE—		
Texas Co., State Lake Barre 38	1447	3769
LEEVILLE—		
Texas Co., L. L. E. Leeville 52	48	4466
SULPHUR—		
Union Sulphur, Fee 835	500	4341
CALCASIEU PARISH—		
Buhler Oil Co., Faist 2, sec 26-8s-10w	*	4412
VERMILION PARISH—		
Del Shell Exploration Co., Landry 1, Jefferson Island dome, 1-13s-14e	*	2704

*Failures; †Junked; ¶Million cu. ft. gas.

ROYALTY PRORATION

Austin.—The Supreme Court ruled last week that royalty contracts are made subject to the power of the Texas Railroad Commission to prorate production. This ruling was handed down in the case styled R. G. Butler v. Jenkins Oil Corporation.

In this case, Butler had an override 1/16 royalty so long as the wells produced 190 barrels daily and 1/32 override if production was below that amount.

The question the court was asked to determine was whether by "production" the contract meant "potential production" or "allowable production."

In its opinion the court said in part, "We state as our opinion that any such contract entered into contemplates the right of the Railroad Commission, in the interests of conservation, to control the production of oil wells, and should be given the construction that the amount of royalty was to be determined by actual production and not on a basis of their capacity to operate."

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Outside Tests

TWO AT RODESSA DRILLING AT INTERESTING DEPTHS

NORTH LOUISIANA — WEEKLY STAFF REPORT

Shreveport.—Two outside tests, the outcome of which will have an important bearing on development of the field, were watched last week at Rodessa where there are 110 active operations at present and almost 400 producing oil and distillate wells.

Three fourths of a mile northeast of production, Idessa Oil & Gas Company's (S. P. Borden et al) Sumner 1, NW SW SW 10-23n-15w, was shut down at 6110 feet waiting for a well photographing machine after electrical tester was run twice, the first time at 6070 feet. This well has been drilled "tight" and little information has been forthcoming relative to contacts of Rodessa horizons.

A half-mile north of a supposed lateral fault northwest of production and across the Texas line, Bay Oil Company of Tulsa were coring below 6090 feet at George Parker et al 1, G. Crowder Survey, after hauling in 7-inch casing to location. Electrical testing showed several gas showings above present depth.

One fourth mile east of the nearest producer in the southwest part of the field Magnolia Petroleum Company completed Noel Estate 1, W. B. Hughes Survey, flowing 140 barrels in 14 hours through 3/16-inch tubing choke at 6035 feet; casing pressure was 200 pounds and tubing pressure 1600 pounds. This is the first producer completed in this headright.

A half-mile northwest of R. W. Norton's J. T. Moore 2, a producer in the William R. Mevers Survey, East Texas Refining Company last week spudded J. H. Belote 1, Charles Ames Survey.

Wells in the John Collum Survey on the north edge of production in Cass County continue to give trouble. Last week Magnolia Petroleum Company had to resort to acidization in another well to complete it, this being George Estate 5, treated with 1500 gallons of acid at 6080 feet. Magnolia Petroleum Company's Rives 5, John Collum Survey, after being completed, ceased flowing but after swabbing was revived. Total depth is 6035 feet.

Standard Oil Company of Louisiana, which is the largest lease holder in North Louisiana at the present time, continues to add to its holdings northwest of production on the Louisiana side of the field, taking 48 acres from Baird and associates in Section 9-23n-16w.

Fohs Oil Company has been actively leasing around the new location of Overlees and associates' Lizzie Henderson 1, R. Bennington Survey, Marion County, Texas, recently made.

Shreveport Oil Corporation sold to Louisiana Oil Refining Corporation 700 acres in the old Pine Island field, in township 21 north, range 15 west.

United Gas Public Service Company is installing separator and tanks at Wheeler A-1, Section 16-18n-16w, Blanchard district, Caddo Parish, recently completed as a gasser at top of the Travis Peak at 5911 feet. A 4-inch line recently was laid to this well from a trunk 3½ miles away.

Arkansas-Louisiana Gas Company last week tied into the two gassers in Section 10-17n-4w, Lincoln Parish, Simsboro field, completed by Lide & Greer several months ago and the gas rights on which are owned by Arkansas-Louisiana Gas Company. The same company also tied into Lide & Greer's deep gasser, Davis Lumber Company 1, Section 12-16n-5w, Bienville Parish, on which Arkansas-Louisiana Gas Company also owns the gas rights. This is the first pipe line outlets provided for these wells completed several months ago.

Four Deep Tests Scheduled

Stanolind Oil & Gas Company will start a deep test soon on acreage in the shallow Pine Island field, Caddo Parish, in or near Section 14-21n-15w, probably on the Dillon Heirs lease. The company will start the deep test, which will go to 6000 feet or more, as soon as 2 shallow tests, Dillon Heirs 113 and 114, Section 14-21n-15w, are completed. These will be chalk rock wells. Since the advent of acidization in that field, Stanolind has been very successful in using this method of completing chalk rock wells there.

About 10 years ago Dixie Oil Company (Standard of Indiana) completed Dillon Heirs 92, located 2065 feet south and 335 feet east NWc 13-21n-15w, at 6351 feet in sand and lime with a 200,000 cubic foot gas showing.

Location for a test below the anhydrite of the Glen Rose on an 8000-acre block in Webster Parish was made last week by Tide Water Oil Company. L. Pipes 1 will be drilled in NE SE 10-18n-10w, where a geophysical "high" was reported to have been found several months ago. Since then additional geophysical work has been done on the block.

Another 6000-foot wildcat test for Caddo Parish is expected to be started

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Pine Island)—		
Standard O&G Co., Dillon Heirs 111, 14-21n-15w	55	1684
DE SOTO PARISH—		
T. W. Simmons (A. F. Tarver et al), A. D. Johns 1, 20-14n-16w	*	2801
GRANT PARISH (Urania)—		
Grant Oil Corp., Swope 1, 17-9n-1e.	15	1609
Rogers Oil Co., Swope 2, 17-9n-1e...	75	1604
LA SALLE PARISH (Urania)—		
H. L. Hunt, Inc., Urania Lbr. Co. 8, 25-10n-1e	15	1542
UNION PARISH (Monroe)—		
Southern Carbon Co., Grayling 12, 29-21n-4e	¶19	2126
CADDO PARISH (Rodessa)—		
Lion O. R. Co., Wynn 4, 8-23-15w.	2000	6085
Phillips Pet. Co., Norton, 7, 17-23n-15w	1500	6048
Wood 4, 17-23n-15w	1800	6095
Bert Kouns et al, Wynn 2, 8-23n-15w.	1500	5955
Magnolia Pet. Co., Levee Bd. A-9, 21-23n-16w	2000	5980
United Gas Pub. Ser. Co., Rodessa 24, 15-23n-16w	1200	5983
Bremer 8, 22-23n-16w	2000	6012
CASS COUNTY (Texas)—		
Magnolia Pet. Co., Mada Green 2, Jas. Davenport sur	1000	6055
Noel Est. 1, W. B. Hughes sur.	1000	6035
Mary Rives 6, Robt. Trammell sur.	1000	6035
Texas Oil Company, W. M. Hall 1, Alex Archer sur	1800	6078
United Prod. Corp., Wall A-2, Alex Archer sur	1200	6080

*Failures; †Junked; ¶Million cu. ft. gas.

ARKANSAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LITTLE RIVER COUNTY—		
Roberts et al, Hale 1, 22-12-29	*	2100

*Failures; †Junked; ¶Million cu. ft. gas.

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soon by W. J. Hunter on a 7200-acre block centering in Section 22-16n-15w.

Gulf Oil Corporation is expected to announce location soon for a deep test on a 25,000-acre block it has had several months in Bienville Parish, centering around Section 35-14n-8w. Geophysical work has said to have shown closure of over 740 feet.

Pressure Drop 2.37 Pounds Daily

The average bottom hole pressure on the Louisiana side of the Rodessa field when the last 30-day survey was completed October 27 was 2009 pounds. This represented a pressure drop of 2.37 pounds per day for the 30-day period immediately preceding that date, according to a compilation of bottom hole pressures made by engineers of the Rodessa operators committee.

This represented an improvement over the preceding 31-day period when the drop was 2.64 pounds per day. Lessening the rate of decline had been anticipated, due to operation of the gas-oil ratio order placed in effect September 15 that holds oil wells to a ratio of 12,500 to 1 and distillate wells to 25,000 to 1.

The following table shows the bottom hole pressure averages for the 3 periods since last July 7, the decline, the decline per day and the days between each test:

	Average in pounds	Drop in pounds	Drop per day	Days between tests
July 7 to August 27	2162	152	2.99	51
Aug. 27 to Sept. 27	2080	82	2.64	31
Sept. 27 to Oct. 27	2009	71	2.37	30

Governor Richard W. Leche and Conservation Commissioner William G. Rankin of Louisiana are expected to call a hearing about November 15 on recommendations for a permanent gas-oil ratio for the Louisiana side of Rodessa. Data on bottom hole pressures collected by the Rodessa operators committee's engineers will be submitted.

MOUNTAIN STATES Completions

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
GLACIER COUNTY (Cut Bank Field)—		
Texas Co., Tribal 2-121, cne se 35-33-6w	20	3016
R. C. Tarrant, State 3, ne ne 36-34-6w	*	2936
PONDERA COUNTY (Valier Area)—		
Montana Power Gas Co., Berger 1, cne 31-31n-4w	*	2862
TOOLE COUNTY (Kevin Sunburst Field)—		
General Oil Co., Haggerty 3, ne sw sw 13-35-2w	18	1515
Huso Bros., Davis 4, cne se 14-36-3w	20	1765

WYOMING

NIOBRARA COUNTY (Lance Creek Field)—		
Argo Oil Co., Elliott 5, cnw nw 5-35n-65w	¶14 & 1200	3831

COLORADO

MOFFAT COUNTY—		
Continental Oil Co., Henderson 1, sw sw sw 16-3n-97w	¶1	2142

*Failures; †Junked; ¶Million cu. ft. gas.

Nebraska Test Dry

MUSKRAT, WYOMING, GAS STRUCTURE MAY YIELD OIL

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—Immediate prospects for commercial oil production in Nebraska rest with 3 wildcats in the western part of the state.

The fourth Nebraska wildcat, Byrd-Frost, Inc., and Magnolia Petroleum Corporation's Abbott 1, NE NE NW 22-24n-38w, was abandoned this week as a dry hole when it encountered granite at 4036 feet. Granite wash was topped at 4008 feet. This test was drilled on the Hyannia high in Grant County. The structure was blocked as embracing 68,000 acres inside a 500-foot fault downthrow. The granite was found much higher than expected, estimates being that the well would be drilled to a possible 7500 feet before igneous formations were encountered. In this respect the well resembles the Indian Territory Illuminating Oil Company's Yuma County, Colorado, test which also logged granite much higher than was expected.

Byrd-Frost, Inc., and Magnolia Petroleum Corporation have a block of 725,000 acres, including much of Grant County, Nebraska, in which the Abbott test was the first to be drilled.

Other western Nebraska wildcat wells are continuing at advanced stages. The most recent start in the area, William Steinle's 1, SE NE SE 25-1n-15w, is drilling at 310 feet. It is on the Riverton structure in Franklin County.

On the Antelope anticline, Sioux County, the J. M. Huber Corporation's Morgan 1, C SW SW 32-35n-56w, is drilling at 1861 feet.

The remaining wildcat in western Nebraska, Stephen Petroleum Corporation's S. J. Palmer 1, NWc NW SW 1-33n-50w, on the Dakota junction, Dawes County, has been shut down at 1700 feet for several weeks.

Two Started in Colorado

Interest in Colorado fields quickened this week as 2 new wildcat wells were started. One is in the eastern Colorado area which has received attention from several companies on leasing and geophysical survey plays during the past several years.

Ten major oil companies and several independents have spent nearly $12,000,000 on geophysical surveys in eastern Colorado, and have built up 34 blocks comprised of over 4,000,000 acres of sufficiently solid acreage to warrant drilling. Seismograph work reached its peak in the past 2 years, and it is believed that in 1937 actual drilling will begin, with a possibility of 15 wildcats being completed in the area during the next year. The new test located in this area is Phillips Petroleum Company's Andover Century 1, NE SW NW 26-18s-65w. The company is moving in a core drill capable of going to 3000 feet.

The other new Colorado wildcat is Cortez Oil Company's Crowley 1, C WL NE NE 2-32n-2e, which is rigging up for a deep test and will start with a 15½-inch surface string.

Muskrat May Yield Oil

Attention of oil men in Muskrat gas structure, Fremont County, Central Wyoming, was focussed this week on Sinclair-Wyoming Oil Company's Muskrat 2-C, deep test to underlying structures. The well, located in NE SW SW 1-33n-92w, is bailing out mud and circulating clear water preparatory to a formation test of the Embar lime at 7265-93 feet. The 7-inch casing is set on top of the Embar, and a test will be made through the casing. Saturation was cored in the Embar at 7268-93 feet, and it is believed that the well may develop a new oil field for the central part of Wyoming.

Ohio Oil Company's 2 wells drilling in the Lance Creek field, Niobrara County, Wyoming, were making rapid progress during the past week. Agnes Rohlff 4, C SW NE 32-36n-65w, is drilling at 2900 feet. Carrie Putnam 1, C NW NW 4-35n-65w, is drilling at 2542 feet.

Continental Oil Company's Emil Rohlff 1, C SL SE NE 32-36n-65w, flowed 1 barrel per hour this week after running liner to bottom at 3967 feet to prevent caving. The company is working with the well to increase production. The 7-inch production casing was cemented at 3876 feet on top of the basal Sundance sand. The company's Schuricht 2-B, SE SW 6-35n-65w, in the south side of Lance Creek, has cemented 7-inch production string at 3962 feet on top of the first Sundance sand. This test had the red beds at 4057-68 feet. The company's Dielman 2-A, NW NE NE 7-35n-65w, cemented 13⅜-inch surface casing at 3718 feet total depth.

Argo Oil Company's recent start in Lance Creek field, Elliott 8, NW SE 5-35n-65w, has the rig up and is ready to spud.

On the west side of Lance Creek, A. B. Cobb and Holly Development Corporation's Novak 1, NE SE SW 6-35n-65w, is coring in the Dakota for-

mation at 3505 feet. Saturated cores were recovered from the Dakota sand at 3331-3532 feet.

Two Due in Tri-State Area

Two of Mountain Fuel Supply Company's wells in the Tri-State gas area are near completion this week. Georgia Kuykendall 1, NE NE SE 22-12n-100w, in Hiawatha field, Moffat County, northwestern Colorado, testing production in the lower Wasatch formations, got 24 barrels oil in 24 hours from 2766-74 feet. Its State 1, NW NE 17-3n-24e, on the Clay Basin Gas structure, Daggett County, northeastern Utah, has plugged back to the Dakota formation at 5739-81 feet after tests showed the Morrison sand at 6120-65 feet dry, and Carl Allen 1, NE SW 32-12n-97w, on the Powder Wash structure, Moffat County, Colorado, is drilling at 5005 feet.

The most recent start in the Tri-State area, Mountain Fuel Supply Company's Adam Cooper 1, C NW SE 15-16n-104w, in the South Baxter Basin field, Sweetwater County, southwestern Wyoming, is spudding at 75 feet. The well is using cable tools, previous reports that it would be drilled with rotary equipment being incorrect.

Good Weather at Cut Bank

Weather conditions which were unusually mild for this season of the year extended the drilling season in northern Montana fields and made the starting of 3 new wells in the Cut Bank field possible this week. One well, The Texas Company's Tribal 5-122, Lot 10 5-32-5w, was completed at 2932 feet for 68 barrels daily after shooting and acid treatment.

Market conditions for Cut Bank crude are shaky, with the possibility that the entire Canadian outlet for the field would be lost in the near future as a result of the recent large completions in Turner Valley field, Canada.

Northern Wyoming

One well was completed in the Byron field, Big Horn County, northern Wyoming, this week. Ohio Oil Company's Irene Lindsay 1, C NW SE 25-56n-97w, pumped 81 barrels in the first four hours, giving it a daily rating of 486 barrels. Production is from the Embar-Tensleep zone at 5080-5318 feet, with the Tensleep topped at 5177 feet. This company's Clarissa Willey 1, SEc NE NE NW 25-56n-97w, is drilling at 2982 feet. State 1, NEc 36-56n-97w, is rigging up rotary.

Sidney H. Keoughan and Taylor Oil Company's Robinson 1, SW SW NW 24-56n-97w, Byron field, is drilling at 2430 feet.

In the Garland field, Big Horn County, northern Wyoming, Ohio Oil Company's Smith 2, W NW SE 35-55n-97w, is drilling at 3065 feet.

Peter Evanoff's McAllister 1, Lot 40, NW NE SE 3-55n-97w, Garland field, is shut down at 3015 feet.

Peay Oil Company's (Crosby & Huntington's) Denio Mining & Milling Company 1, C NE NE NE 15-55n-97w, is drilling at 3930 feet. The test is on the south Garland fault block, in Big Horn County, Wyoming.

The directional hole being drilled to kill Stock Oil Company's wild gasser in the Garland field, Allen 1, SE NW SE 35-55n-97w, is down to 1055 feet. The directional hole starts 190 feet northwest of the gas well. Approximately 60,000,000 cubic feet of gas daily is escaping from the wild well and is burning at the crater, which is about 50 feet to the side of the rig location. The well has been out of control almost continuously since January 17, 1936.

Kevin-Sunburst Active

Drilling activities showed a slight pick-up in Kevin-Sunburst field, northern Montana, this week.

Coolidge & Coolidge completed Haskins 1, SW SE SW 25-36-2w, for 30 barrels initial from 1630 feet.

Fred Munger's Peterson 1, NW NW SW 8-35-2w, was plugged and abandoned at 1654 feet.

Stanley Gray's Aronow 2, C WL NW SW 12-35-3w, is swabbing 3½ barrels oil per hour. The well is producing from 1546 feet.

Despite the late season, operators are starting 3 new wells in the field this week. A. E. Crumley is spudding Fryberger 7, C WL SE SE 24-35-3w. O. F. Lee's Miller 1, C NE NE 17-34-3w, is drilling at 150 feet. William Schaffer is moving in material for Schaffer 1, SE SW NE 11-34-2w.

Several wells in both Kevin-Sunburst fields in northern Montana have been shut down for the winter, as the dropping temperatures resulted in frozen water lines.

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Wildcat Produces

IMPORTANT HARBOR DISTRICT TEST PUMPS 200 BARRELS

WEEKLY STAFF REPORT

Los Angeles—General Petroleum Corporation's Terminal 1, most important test well in the Los Angeles Basin, was completed November 2, pumping 200 barrels a day gross fluid cutting 24 percent fresh water. Fluid was accompanied by 100,000 cubic feet of gas. The oil tested 28 gravity and the gasoline content of the gas is 3 gallons per 1000 cubic feet. This well is in Section 4-5s-13w at the south edge of Wilmington, Los Angeles Harbor district.

Basement schist was encountered at 6787 feet, the hole was bottomed at 6814 feet, and plugged with cement to 5510 feet. A 6⅝-inch combination string, including 500 feet of perforations on bottom, was landed at 3625 feet and cemented through perforations at 3125 feet. A 4¾-inch combination string, including a left-hand nipple at 3631 feet, and 200 feet of perforations on bottom, was landed on the plug at 5510 feet and cemented through perforations at 5310 feet. The well was swabbed 3 hours and flowed 26 gravity oil by heads 5 hours, then died. The fluid level was found to be at 2200 feet and swabbing was resumed in an effort to induce continuous flow, but without success, and the well was put on the pump.

Results Inconclusive

Results of the test so far are not considered as discouraging or conclusive, since only 200 feet of a potential 810 feet of lower oil zone is open to the hole. The remaining 610 feet of this zone may be perforated before testing the zone opposite the 6⅝-inch perforations.

During the drilling of Terminal 1, 2 tests were made of the upper zones. With the hole bottomed at 2694 feet, on June 11, 1936, the well flowed at the rate of 86 barrels a day of 13.2 gravity oil cutting 12 percent. With the hole bottomed at 3019 feet, a 4¾-inch oil string, including 296 feet perforated on bottom, was landed at 3015 feet. On June 25, 1936, the well flowed at the rate of 200 barrels a day of 18.2 gravity oil cutting 2.8 percent. It appears to have penetrated 4 oil zones, each of which is capable of producing oil in commercial quantities.

In South Gardena area, 14 miles south of Los Angeles, West American Oil Company's Dominguez Estates 1 was suspended temporarily at 6595 feet. It is planned to plug back to near the shoe of the surface casing at 715 feet and redrill a directed hole. It is indicated the bottom of the hole will be placed a considerable distance from the bottom of the present vertical hole. It is the belief of the operator that a large area can be adequately explored by drilling from this one location, thus eliminating the usual expense of building derrick, rigging up, setting surface casing, etc. No important showings were encountered in the first hole. This test is located in Section 5-4s-13w, about 2 miles SW from the Dominguez oil field.

Wildcat to Test

Signal Finance Corporation's Woods 1, wildcat in Section 10-3s-14w, is slated for a test about the middle of the week. The 6⅝-inch casing was cemented at 7128 feet, presumably to test oil bearing formations near the shoe. The hole is bottomed in the basal conglomerate zone at 9326 feet, consisting of sand, rounded pebbles, and angular schist fragments, and giving fair cuts of oil.

Shell Oil Company's K.C.L. A-6, Ten Section field, 7 miles east of Elk Hills, was completed October 29 as the second producer of this new field. During the initial 2 hours the well flowed 108 barrels of 35 gravity oil cutting 16 per cent and 1,500,000 cubic feet of gas. Flow was through open lines with 200 pounds casing pressure. Present production is 1376 barrels of 34.3 gravity oil and 1,270,000 cubic feet of gas daily. The cut has dropped to 2.2 percent. Flow is through a 7/16-inch choke, with tubing and casing pressures, of 375 pounds and 1190 pounds, respectively. Depth is 8984 feet, plugged to 8385 feet, with 6⅝-inch casing cemented at 8315 feet, and 107 feet of 4¾-inch liner, including 63 feet perforated, landed at 8383 feet. The top of the first high pressure, high gravity oil sand, from which the discovery well, Shell Oil Company's K. C. L. 1, is producing, was cored at 7763 feet and 9-inch casing was cemented at 7760 feet. An aggregate of more than 400 feet of oil sand was cemented off between the shoes of the 9-inch and 6⅝-inch casings. This well is located ¼ mile southwest from the discovery well and correlates 49 feet higher at the top of the first oil sand.

Ten Section Outpost Low

Standard Oil Company's K. C. 10-1, located 1 mile north of the discovery well, above, is temporarily bottomed at 8232 feet and is being reamed to straighten the hole before coring ahead. Top of the oil sand has not been encountered, indicating this test correlates more than 420 feet lower than the discovery well.

Mohawk Petroleum Company's Earl Fruit 2, DiGiorgio area, 1½ miles southeast of Mountain View field, cored the top of the basement metamorphics at 6158 feet. A 6⅝-inch water string was cemented at the top of the oil sand at 6070 feet and the water shut-off approved. Fruit 2 is in Section 10-31s-29e and about 660 feet west of the discovery well, Mohawk Petroleum Company's Earl Fruit 1. In the latter well the top of the schist was cored at 6015 feet.

Associated Oil Company's DiGiorgio 2, located ¼ mile northeast of the discovery well, above, was bottomed in schist at 5630 feet, plugged back to 5425 feet, and cemented 81 feet of 8⅝-inch blank liner at 5425 feet. The hole was then cleaned out to 5460 feet and a formation tester set on a packer at 5386 feet. Gas-cut mud, but no oil, came through the tester. The test was abandoned.

Shell Oil Company's Greer 1, Section 15-31s-29e, 1 mile south of Earl Fruit 1, above, cored the top of the schist at 6151 feet and is standing cemented with 5¾-inch casing set at the top of the oil showings at 5720 feet.

General Petroleum Corporation's Arvin 1 is being cored ahead at 7158 feet in gray sand giving light cuts. The test will be cored to the top of the schist before setting casing. Location is about 3 miles southeast of Earl Fruit 1, above, in Section 26-31s-29e.

Superior Oil Company has staked a location 650 feet north of General Petroleum Corporation's Arvin 1, above, on the basis of showings in the latter. Drilling will not start, however, until Arvin 1 has been conclusively tested.

CALIFORNIA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTEBELLO—		
Texas Co., Baldwin 15	840	5895
TORRANCE—		
Gus Pongratz, Vaccaro 2	65	3359
KERN FRONT—		
General Pet. Corp., Young 38	240	1950
MIDWAY-SUNSET—		
C. C. M. Oil Co., No. 19	225	2362
MOUNT POSO—		
R. S. Lytle, Dorsey 5	100	1580
Shell, Security 18	255	1805
TEN SECTION—		
Shell, K.C.L. A-6	1435	8985
EL CAPITAN—		
General Pet. Corp., Erburu 20	215	1552
KERN COUNTY—		
Hall-Baker Co., Quinn 20-1	*	2662
Texas Co., K.C.L. C-11-49	*	10,014
Shell, Voigt 1	*	4854
Associated Oil Co., Di Giorgio 2	*	5630

*Failures; †Junked; ¶Million cu. ft. gas.

NO SLANT HOLES

Los Angeles.—What had become known as the "slant-hole drilling proposition" placed on the ballot at the general election in California met with defeat. If carried, it would have been permitted to drill wells up on the high lands and drift the hole out under the ocean to tap the oil sands, and such wells woulld have paid the state a royalty of 14-2/7 percent. A movement has been underway in California for many months to prevent the drilling on ocean fronts in any manner. It is now unlawful to drill such slant holes.

ONE ARKANSAS PERMIT

El Dorado, Ark.—One drilling permit was authorized last week by the Arkansas Board of Conservation for Wallace and Staples, Hot Springs, Arkansas, W. F. Davis 1, located 300 feet north and west SEc SE NW 23-6-15, Grant County.

HIGHER OUTPUT

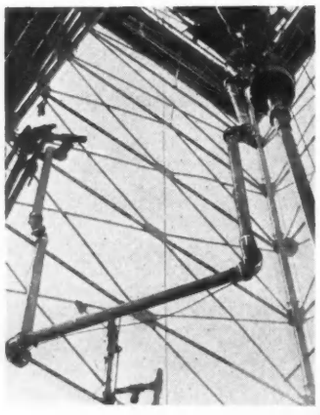
Broomfield discovery is helped by acid treatment

Mt. Pleasant, Mich.—Treated with 500 gallons of acid on November 2, Pure Oil Company's Embrey 1, 34-15n-6w, Isabella County, increased from 35 barrels to 40 barrels hourly, producing from 3617 feet, 11 feet in the Monroe limestone horizon.

Before treatment the hole was plugged back from 3620 to 3617 feet after oil started to cut from ½ to 1 percent water.

The discovery, first commercial oil well on the Broomfield structure, is expected to provide the stimulus for a major testing program in the Broomfield-Sherman township district. Pure Oil Company, major lease holders in the play, had made five new locations up to this week and McClanahan Oil Company, who secured a 142 acre offset farm-out from Michigan Cities at a price and over-riding royalty not revealed, was building rig on north and east offsets this week.

Twenty-three drilling permits were issued by the State Conservation Department the current week, highest number in a 9 weeks period, bringing the year's total to 640 as compared to 700 for all last year.



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MICHIGAN

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRATIOT COUNTY—		
Max Pray's Whittig 1, se se se 23-11n-1w	*	3213
American Production's Siefert 1, c ne ne 15-10n-4w	*	1190
IONIA COUNTY—		
Terry Dale, Inc.'s, Tow 1, sw sw ne, 12-6n-7w	*	4550
ISABELLA COUNTY—		
J. V. Wicklund's Beatty 1, se se ne 23-16n-4w	60	3778
MONTCALM COUNTY—		
Hyatt-Norton's Orr 1, c sw se 9-12n-7w	¶4	1279
Fletcher-Leyman's DePoy 1, sw ne se 13-12n-6w	¶1	1251
R. E. Gallagher's Allison 1, se se nw 34-11n-5w	30	3219
Daily Crude Oil Co.'s Robins B-1, se ne ne 3-10n-5w	¶4	990
J. W. Leonard's Durbin 2, se nw ne 11-10n-5w	*	3209
OGEMAW COUNTY—		
Ide Oil Co.'s Mahoney 1, sw nw nw 19-22n-2e	35	2775
SHIAWASSEE COUNTY—		
G. E. Shepherd Tr.'s Wiles 1, se nw sw 32-5n-3e	*	999

*Failures; †Junked; ¶Million cu. ft. gas.

EASTERN FIELDS

EASTERN FIELDS — WEEKLY STAFF REPORT

Completions

Company, Well and Location	Init Prod. Bbls.	Depth
OHIO		
ATHENS COUNTY—		
Ohio F. G. Co., Hiram Thompson 1	¶	975
Mark Selby & Co. 1	¶	875
Cora Evans 2	¶	1890
D. T. Orndoff, G. L. Bryson 1	¶	581
Ohio F. G. Co., S. C. C. Co. 140	*	3960
ASHLAND COUNTY—		
Ohio F. G. Co., George Parko 2	¶	2615
R. E. Spahr 1	*	2821
BELMONT COUNTY—		
W. S. Burcher, Huntsman & Peters 2	¶	350
FAIRFIELD COUNTY—		
L. J. Knecht, City Natural Gas Works 2	¶	....
HOCKING COUNTY—		
Nelsonville C. & Land, Kachelmacher Estate 4	¶	2069
Abraham Mohler, Griffin Producing Co. 2	¶	2939
HOLMES COUNTY—		
Ohio F. G. Co., W. L. Fulmer 1	*	2810
HURON COUNTY—		
Mary A. Park, McCorkill & Co. 4	¶	290
LORAIN COUNTY—		
Ohio F. G. Co., Fred Walkden 1	¶	2648
MEDINA COUNTY—		
L. R. Wideman, Edson & Sons 36	*	2980
MEIGS COUNTY—		
Dolph Hysell, Barton & Utsinger 2	¶	690
MORGAN COUNTY—		
Meda V. Smith, Kepple & Co. 9	5	405
MUSKINGUM COUNTY—		
Wm. and Catherine Wentz, W. A. Crowley 1	¶	4229
PERRY COUNTY—		
Alma A. Beard Hrs., Wehrle Bros. 3	¶	2804
STARK COUNTY—		
East Ohio Gas Co., Frank Halaz 1.	¶	4226
TUSCARAWAS COUNTY—		
Frank B. Kinsey, George Jewell 1	¶	1300
WASHINGTON COUNTY—		
Ira H. Bassworth, Ben Andrews 1	*	978
Eva Richard, Feo. Kernodle 1	*	990
Harry A. Karcher, Fogle & Dixon 1	3	1018
WAYNE COUNTY—		
Ohio F. G. Co., E. J. Carver 1	¶	3109

*Failures; †Junked; ¶Million cu. ft. gas.

THE OIL WEEKLY REPORT ON IMPORTANT

Wildcat Tests

ALABAMA

HOUSTON COUNTY—Rice O&G Co.'s Oakley Est. 2, se nw sw 9-3n-29e, elev 191 ft, sd for heavier rig, td 4002 ft.

MOBILE COUNTY—Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

BRADLEY COUNTY—Phillips Pet. Co.'s & Joe Modisett's Brown 1, ne nw 28-16-12, elev 90 ft, top red beds 2829 ft, dr 3670 ft.

CALHOUN COUNTY—I. P. B. Oil Corp.'s Henisberger 1, sw se 9-11-13, elev 207 ft, woc 110 ft.

COLUMBIA COUNTY — Burford & Co.'s Kendrick 1, nw se 8-19-18, sd 5050 ft. J. C. Buck beeTr.'s Cumbie 1, 17-17-18, sd 3175 ft. King Oil Corp.'s Fullenwider & Kitchen 2, se nw 13-17-22, dr 1800 ft.

CLARK COUNTY—J. G. Wooten's Sparkman 1, 1-11-20, dr 300 ft.

CLEVELAND COUNTY—Diffie et al's L. C. Ross 1, sw ne 1-11-11, sd 100 ft. R. L. Saxon's L. C. Tipton 1, sw ne 13-11-12, elev 207.4 ft, rur. J. R. Lockhart's I. Robertson 1, se se 36-10-11, rur

DALLAS COUNTY—Walter Lown's Atkinson 1, ne nw se 7-10-13, woc surf csg.

HEMPSTEAD COUNTY—H. D. Easton et al's Conway-Tiller 2, sw sw 34-12-27, elev 251 ft, sd 3005 ft, high water. Imperial O&G Products Co.'s Foster 1, nw sw 35-12-26, elev 332 ft, 3511-42 coarse hd sandy lime, 3542-62 ft solid gray lime, dr 3625 ft, sand & lime. Stewart Oil Co.'s Fee 1, se ne se 31-12-23, elev 400.3 ft, dr 3228, broken rock. Louis Hays' State 2, swc 18-14-25, sd 3030 ft.

LITTLE RIVER COUNTY—M. E. Sanderson's Penning 1, ne ne sw 6-13-30, sd 168 ft. Joe Strahan's Dierks Lbr. Co. 1, 21-12-28, 10-in csg 40 ft.

MILLER COUNTY—Erwin & Leach's Red River Farms 1, 2-17-26, 10-in csg 447 ft, top first anhydrite 4454 ft, top massive 4610 ft, coring 4748 ft. Joiner et al's Montana Realty Co. 1, top massive anhydrite 4005 ft, so 4632-64 ft, arr core 5675 ft. C. V. Lenz's Dale 7, 24-15-26, dr 4376 ft.

NEVADA COUNTY—Benedum & Trees Oil Co.'s Groves 1, sw sw 10-14-20, elev 353 ft, wosr td 2287 ft. Steel & Warmack's Wm. Haynie 1, se se nw 6-14-21, sd 200 ft. L. M. Glasco's Ritchie 1, nw se 10-14-20, rur; Ritchie 2, 3 and 4, nw se, lcns.

POPE COUNTY—Ark.-La. Gas Co.'s L. C. Smith 1, sw sw se 10-8n-21w, 13⅜-in csg 1997 ft, dr 2426 ft.

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK — Mohawk Pet. Co.'s Langer 1, 30-16-15, dr sandy shale 1820 ft. Western Gulf's S. P. Land Co. 3, 3-17-15, td 8531 ft, recovered tubing, plugging bottom.

KERN COUNTY

LERDO—Arkelo Pet. Co.'s Arkelo 41, 23-28-26, dr shale 5041 ft, top Benonite 5014.

LOST HILLS—Associated's No. 6-L-3, 2-26-20, td 1670 ft, milling; Williamson 12-A-3, 11-26-20, sd 1675 ft. Lincoln Pet. Co.'s Theta 2, 12-26-20, sd 2830 ft. Standard's United 2, 2-26-20, lcn. Texas Co.'s Theta 1, 11-26-20, td 2037 ft, plug 1670 ft, to test casing and shoe. Associated's Talor 1, 1-26-20, sd 5903 ft.

MOUNTAIN VIEW—Associated's Di Giorgio 2, 3-31-29, td 5630 ft, plug 5425 ft, formation tester showed gas cut mud, no oil. Mohawk Pet. Co.'s Earl Fruit 2, 10-31-29, td 6164 ft, wocs 8⅝-in at 6070 ft. Shell's Greer 1, 15-31-29, td 6171 ft, wocs 5¾-in at 5720 ft.

SO. MARICOPA—E. A. Bender's Robinson 1, 14-10-23, td 1235 ft, plug 750 ft, retesting shutoff.

DEVIL'S DEN—Big Brothers' No. 1, 2-25-18, lcn. Den Pet. Co.'s Bates 1, 20-25-19, td 1287 ft, redr to 1220 ft, sd.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*
‡—*salt water (completions).*
†—*junked and abandoned.*
¶—*million feet of gas.*
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
b.s.—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg—*fishing.*
ft—*feet.*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*sho oil.*
so&g—*s ow oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wosr—*waiting on standard rig.*

GREENFIELD—British American Inv. Co.'s No. 1, 21-31-27, foundation.

SAN EMIDIO—I. L. Burch's No. 1, 3-10-23, dr shale 1324 ft. Texas Co.'s K.C.L. C-11-49, 11-11-22, td 10,014 ft, abn, in etchegoin pliocene.

RIO BRAVO—Associated's K.C.L. 1, 30-29-25, td 7530 ft, r.

MOUNT POSO—Calcoast Oil Co.'s No. 1, 36-26-27, dr shale 2216 ft.

WASCO—Continental Oil Co.'s K.C.L. A-1, 8-27-24, rur.

JASMINE—Doyle Pet. Co.'s Quinn 1, 15-25-27, td 2956 ft, plug 2882 ft, pumping 25 bbls 14 gravity oil, to reperforate liner. Hall-Baker Co.'s Quinn 2, 20-25-27, td 2662 ft, abn in sandy gray shale, base of etchegoin 1890 ft, top of brown shale 2354 ft.

EAST EDISON — East Edison Oil Co.'s Tejon 1, 21-30-30, td 1130 ft, wocs 10-in at 890 f.t

ARVIN—General Pet. Corp.'s Arvin 1, 26-31-29, dr gray sand light cuts. Superior Oil Co.'s No. 1, 26-31-29, lcn.

KERN FRONT—Alvah M. Kaimes' Sesnon 1, 17-28-27, dr sandy shale 2766 ft.

GRAPEVINE—99 Oil Co.'s Tejon 1, 5-10-19, rur. Ohio Oil Co.'s Title Ins. & Trust 1, 21-11-19, dr shale 4516 ft. Reserve Oil & Gas Co.'s Ritchie 33-1, 33-11-19, td 6030 ft, plug 4805 ft, sidetracking liner at 4784 ft; Tejon 33-2, 33-11-19, td 4505 ft, plug 4490 ft, co.

BUENA VISTA—Ohio Oil Co.'s K.C.L. B-1, 4-32-26, td 5473 ft, to run formation tester.

NO. BELRIDGE—Shell's Voigt 1, 5-28-20, td 4854 ft, plug 1502 ft, bailed to 1300 ft, fluid water with trace of tar, abn.

TEN SECTION—Standard's K. C. 11-1, 19-29-26, dr sandy shale 7221 ft. Superior Oil Co.'s K.C.L. 8, 11-30-26, dr sandy shale 5358 ft.

MISCELLANEOUS

ALAMEDA—Seaboard Oil Corp.'s Johnson 1, 13-3-3, dr shale and sand 5043 ft.

HUMBOLDT COUNTY—Texas Co.'s Eureka 2, 22-3-1, dr sand and shale 5516 ft.

KINGS COUNTY — Associated's Avenal 1, 35-23-17, td 3110 ft, plug 2890 ft, sd. A. S. Clare's Laymance 1, 20-20-22, lcn. J. P. Herndall's Spreckles 1, 16-24-18, td 4201 ft, plug 1600 ft, sd. Milham Oil Corp.'s Resources 1, 20-22-22, sd 5810 ft.

SAN BENITO COUNTY — Associated's Murphy Ranch 1, 5-12-4, dr hard silty shale 4566 ft.

SOLANO COUNTY—Amerada Pet. Corp.'s Hamilton 1, 26-4-2, rur; Hoppe 1, 22-4-2, sd 7029 ft.

TULARE COUNTY—J. W. Alford's Williams 1, 28-16-23, rur. E. P. Jennings' No. 1, 4-24-23, sd 1830 ft. Trico Oil & Gas Co.'s Calif Western 1, 2-23-23, sd 1800 ft; Callison 1, 27-21-25, dr gray sand 3348 ft.

MONTEREY COUNTY—Shell's Branch 2, 34-24-10, dr shale 3975 ft.

SAN LUIS OBISPO COUNTY — Cholame Synd.'s Jack 2, 10-25-15, td 3648 ft, trying to locate water. R. W. McBurney's No. 1, 23-32-22, dr hard shale 1424 ft. Union's Porter 1, 22-32-15, dr shale and sand 2516 ft. United Foreign Oil Co.'s Panorama 1, 2-32-21, dr light gray sand 2189 ft.

SANTA BARBARA COUNTY—Associated's Edwards Estate, 2-4-30, rur. Bankline Oil Co.'s No. 2, Permit 191, sd 4708 ft. Barnsdall Oil Co.'s Tognozzini 2 (Gato Ridge), rur. O. C. Fields' Santa Rita 1, 11-7-33, sd 2064 ft. E. H. Moore's Union Sugar A-1, 25-10-35, dr Monterey shale 7759 ft. 101 Oil Co.'s Hollister 1, 35-5-33, rur. Petrol Corp.'s Tognozzini 1, 9-8-32, bldg roads. Todos Santos Oil Co.'s No. 1, 29-9-34, sd 2365 ft; McLoney 1, 4-8-32, technical spud 10/23. Top Row Oil Co.'s Spanne 1, 6-35, (Lompoc) dr shale 1310 ft.

VENTURA COUNTY

PIRU—Associated's Wiley Canyon 1, 6-3-11, rur. Bolsa Chica Oil Co.'s Hidden 1, 5-4-18, rigging cable tools.

SESPE—Condor Oil Co.'s Condor 1, 6-4-19, sd 1365 ft.

ROUND MOUNTAIN—Continental Oil Co.'s Casitas 1, 7-3-23, dr sandy shale 560 ft.

SOUTH MOUNTAIN — Geo. L. Duty's No. 1, 13-3-21, sd 183 ft. Honolulu Oil Corp.'s Hobson 1, 23-3-21, td 4853 ft, will plug at 4700 ft, to test.

BARDSDALE—El Rancho Oil Co.'s Elkins 1, 9-3-19, td 5107 ft, plug 4990 ft, swabbing. Layning & Jacobs' No. 1, sd 1275 ft.

OXNARD—Vaca Explor. Co.'s Calif. Lands 1, 6-1-21, td 2830 ft, fsh.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, td 9525 ft, swabbing dr water.

SESPE CREEK—Wasibi Oil Co.'s Speik 1, 35-5-19, dr shale 1004 ft.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall Oil Co.'s Rancho S. F. 1, 26-4-17, dr hard shale streaks sand 4489 ft. Holbrook Pet. Co.'s Newhall Land & F. Co. 1, 28-4-16, td 3394 ft, wocs 10-in at 2504 ft. Yant Pet. Corp.'s Yant 5, 1-3-16, td 2734 ft, testing on pump.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, td. 3920 ft., to deepen.

COVINA—Charter Oak Oil Co.'s Bright 1, 7-1-9, td. 1011 ft. dr.

NO. LONG BEACH—Geo. L. Clayton's Clayton 1, 32-3-12, spud 10/28, dr.

GARDENA—Crude Oil Dr. Co.'s No. 1, 31-3-13, sd. 5490 ft.

EL NIDO—K. L. Lystle's McKenna 1, 33-3-14, td 7352 ft, plug 4315 ft, landed liner to test.

TORRANCE—Oliver McDowell's No. 1, 35-3-14, sd 7210 ft.

ASCOT SPEEDWAY—Republic Pet Co.'s Jordan 1, 24-1-13, idle rig.

DAVIDSON CITY—Shell's Flood Control 1, 11-4-13, dr shale 3207 ft.

HAWTHORNE—Signal Finance Corp's Woods 1, 10-3-14, td 9326 ft, wocs 6-5/8 in at 7128 ft.

GARDENA—Standard's Bodger 1, 22-3-14, dr sand and shale 5471 ft. Universal Cons. Oil Co's Carrell 1, 36-3-14, rur. West American Oil Co.'s Dominguez Estates 1, 5-4-13, sd 6593 ft, may redrill.

FOX HILLS—Superior Oil Co.'s Inglewood Ext. 1, 25-2-15, dr shale 7258 ft.

ORANGE COUNTY—Calif. Eastern Oil Co's Verde 1, 31-3-9, td 4759 ft, redr at 4520 ft. West Coast Ref. Co.'s Yorba 1, 25-3-9, dr hard brown shale 2024 ft.

SAN BERNARDINO COUNTY—Chino Pet Corp's Abacherle 1, 12-3-8, td 2235 ft, pumping 56 bbls of 24.9 gravity oil, clean. Equitable Pet. Explor. Co's No. 1 (near Barstow) 11-10-5, dr hard sand 2976 ft. Tehama Pet Co's Kraemer-Backs 2, 33-2-8, dr 940 ft. Pellissier 1, 4-3-8, dr cable tools 1313 ft.

COLORADO

ARCHULETA COUNTY—Cortez Oil Co.'s Crowley 1-A, cwl ne ne 2-32n-2e, ru.

BACA COUNTY—Paul R. Robb Petroleum Corp.'s Lovetee 1, nw nw nw 24-32s-48w, dr on junk at 2790 ft.

BOULDER COUNTY — Boulder Producing & Drilling Co.'s Maxwell 2, sw sw ne 24-1n-71w, dr 2325 ft in black shale.

JEFFERSON COUNTY—Ruby Hill Oil Co.'s Braden 1, se se 24-4n-69w, sd 4475 ft.

KIOWA COUNTY—Gulf Oil Corp.'s Risser-Union Pacific 1, csw ne 1-17s-50w, mim.

LAPLATA COUNTY—Detroit Oil & Gas

Co.'s 1, sw sw 8-35-12w, owdd, dr at 3170 ft.

PUEBLO COUNTY — Phillips Petroleum Co.'s Andover-Century 1, ne sw nw 26-18s-65w, moving in core drill for 3000 ft test.

PARK COUNTY — South Park Oil Co.'s State 1, se se sw 16-11s-75e, dr 5277 ft and carrying 4¾-in csg at 5244 ft. Company's Lemarr 1, ne ne se 34-11s-75w, dr 2136 ft with 10¾-in csg at 2127 ft.

WASHINGTON COUNTY—Indian Territory Oil Co., Foster Mining Corp. and Carter Oil Co.'s Vorce 1, cne ne 28-1s-49w, dr 6895 ft.

FLORIDA

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, elev 120 ft, dr 5483 ft, limestone.

NASSAU COUNTY—St. Mary's River Oil Corp.'s Bank of Hilliard 1, nw ne se 19-4n-24e, elev 110 ft, hole clean dr 738 ft.

POLK COUNTY — Edw. A. Hill's Polk County Lbr. Co. 1, nw nw ne 32-25s-26e, dk.

KANSAS

BARBER COUNTY — Sinclair Prairie Oil Co.'s Gentry 1, ne ne ne 1-33s-15w, dr 5175 ft.

BARTON COUNTY—Brouk et al's Keil 1, se se ne 11-16s-15w, testing. Yernell & Carlson's Rath 1, ne ne ne 35-18s-12w, td 3489 ft, D&A. C. L. Price's Deutsch 1, nw nw ne 16-16s-13w, dr 3125 ft. F. E. Bailey et al's Hammeke 1, nw ne sw 12-18s-12w, sd 315 ft. Missouri Valley O&G Co.'s Peach 1, se se se 24-16s-14w, rust. Freehorn et al's Sooy 1, nw nw ne 27-18s-12w, cel.

BUTLER COUNTY—Simpson Oil Co.'s Deblem 1, sw sw sw 11-26s-6e, fsg 2783 ft. Hutchinson O&G Co.'s Westfall 1-A, se sw se 13-27s-3w, dr 2030 ft. Ed Solomon's Church 1, sw ne se 8-25s-5e, sd 200 ft.

CHASE COUNTY—Hanna et al's Brothers 1, se se nw 25-20s-8w, loc. Propp et al's Fromm 1, se se se 29-18s-9e, dr 2150 ft.

CLARK COUNTY — Olson & Watchorn's Morrison 1, cse sw 17-32s-21w, rust.

COWLEY COUNTY—Home Natural & McNish's Werner 2, se se sw 31-32s-6e, testing 1870 ft. Croft et al's Whitson 1, ne ne ne 20-33s-4e, ru. Wakefield et al's Tinker 1, nw nw se 26-32s-3e, dr 525 ft. C. H. Cross' Cook 1, sw sw sw 6-32s-6e, ru mach.

DECATUR COUNTY—Winkler & Koch's Vessey 1, cnw se 26-3s-26w, fsg 2135 ft.

EDWARDS COUNTY—Stanolind & Elwell's Donovan 1, cse se 14-25s-18w, set whipstock 4332 ft, woc. Royal Pet. Corp.'s Krupp 1, nw nw se 18-24s-19w, rig.

ELLIS COUNTY — Empire's Samuelson 1, ne ne sw 31-11s-16w, ur 5-in csg. Bridgeport Mach.'s Ubert 1, ne ne nw 12-13s-18w, dr cement. Trigg et al's Armbrister 1, se se sw 6-11s-19w, dr 2975 ft. Lario's Marshall 1, nw se ne 36-11s-18w, so&g 3390 ft. Champlin et al's Hadley 1, se sw ne 30-11s-17w, sd 3792 ft. Ted Kerr et al's Koblitz 1, se sw nw 23-12s-18w, dr 2700 ft. Wolf Creek et al's Polifka 1, sw sw ne 24-13s-18w, td 3990 ft, D&A. Glick & McMorrow's Staah 1, sw sw se 6-13s-17w, rust. Taylor et al's Emery 1, ne ne ne 23-14s-18w, dr 2060 ft. Winkler & Koch's Jensen 1, sw sw ne 3-13s-18w, rig. Brouk et al's Jacobs 1, nw nw se 31-15s-16w, fsg 2635 ft. Bridgeport Mach.'s Madden Est. 1, ne nw nw 26-15s-18w, swbd 7½ bbls oil per hr, 12 hrs. Murphy Oil Co.'s Wiesner 1, se se sw 12-14s-19w, sd 600 ft. Jones Bros. et al's Phillips 1, se se nw 9-15s-17w, ru. Moth et al's Penney 1, sw sw se 29-14s-18w, loc abd.

GRAHAM COUNTY—Nook & Young's Hills 1, nw se se 19-10s-21w, dr 3528 ft. Sam Murphy & Alcorn's Wamoff 1, cnw nw 27-10s-22w, dr 4070 ft.

GRANT COUNTY—Columbian Fuel Co.'s Gray 1, cse 3-29s-35w, milling csg.

GREENWOOD COUNTY — Hale & Rees' Needles 1, ne sw nw 12-25s-10e, dr 1350 ft.

HARVEY COUNTY—Harburney Oil Co.'s Schragg 1, nw nw se 24-22s-3w, sd 3265 ft. Saco et al's Guthrie 1, ne ne nw 8-22s-2e, ru.

HASKELL COUNTY—Helmrich & Payne's Meredith 1, csw 10-30s-33w, rur.

JEWELL COUNTY—Twin State Oil Co.'s Brown & Majors 1, sw se nw 21-5s-6w, td 3623 ft, D&A.

KEARNEY COUNTY—J. L. Murphy et al's Campbell 1, nw nw sw 32-25s-35w, dr 2020 ft.

LINCOLN COUNTY — Graham et al's Smiley 1, ne nw nw 26-10s-9w, set 10-in csg 300 ft, sd.

LOGAN COUNTY—Rosespring Drlg. Co.'s Wright 1, cse se 12-15s-35w, rur.

MARION COUNTY—Western Kansas O&R Co.'s Hauser 1, sw sw sw 19-19s-4e, ru. Harwood Oil et al's Mott 1, ne ne ne 2-17s-4e, dr 1405 ft.

McPHERSON COUNTY—Skiles et al's Nuse 1, ne ne sw 18-18s-4w, cel.

MEADE COUNTY—Pacific Midwest Co.'s Rexford 1, ne se sw 8-30s-29w, ru.

NESS COUNTY—Newton Dev. Co.'s Tenny 1, nw nw se 19-18s-25w, dr 2245 ft. Sayre Oil Co.'s Ryersee 1, cne se 34-18s-21w, sd 4270 ft.

PAWNEE COUNTY—Kessler & Their's Shea 1, ne ne ne 22-21s-17w, woc 94 ft.

PRATT COUNTY—H. V. Elwell et al's Fay 1, nw nw se 15-27s-14w, co 4355 ft. I. T. I. O. & Olson's Bolt 1, cnw ne 5-29s-11w, co 4486 ft.

RENO COUNTY—Miller et al's Detter 1, ne se nw 28-22s-7w, dr 3125 ft. Pryor & Lockhart's Kerr 1, cnw 22-23s-8w, dr 3893 ft. Foraker et al's Hiett 1, se sw ne 34-24s-4w, co 3503 ft. Clyde Pulse et al's Payne 1, sw nw ne 4-22s-7w, dr 1175 ft. Carlock et al's Brown Royalty Co. 1, nw nw ne 32-22s-10w, rr. Torry & Feaster's Schroeder 1, se se se 1-23s-7w, bldg rig. Inca Prod. Co.'s Moore 1, cne ne 26-24s-3w, woc 579 ft.

RICE COUNTY — Allison & Fitzwilliams' Foby 1, nw sw nw 17-19s-7w, sd 3516 ft. Buckley's Bailey 1, sw sw nw 19-20s-6w, rig. Charles Pet. Corp.'s Speck 1, nw nw se 29-20s-8w, fsg 2795 ft. Carlock et al's Deweese 1, sw nw nw 32-20s-7w, dr 2535 ft. Shell Pet. Corp.'s Soenken 1-A, cnw 10-19s-9w, woc 185 ft.

ROOKS COUNTY—Lester & Dean's Burtt 1, se se ne 29-10s-2w, sd 3422 ft. L. C. D. Drlg. Co.'s Westhusin 1, cne se 11-19s-17w, 1800 ft oih, td 3192 ft. J. A. Shoemaker's Stebbins 1, ne ne sw 26-7s-17w, pb. Buckner & Schaf's McConnell 1, ne ne ne 34-6s-18w, dr 590 ft. Empire's Ham 1, sw nw nw 24-8s-19w, ur 12-in csg 1280 ft. Jarvis & Strickland's Hamel 1, se se sw 7-8s-20w, mim.

RUSH COUNTY—Skeeles et al's Grumbein 1, sw sw ne 7-16s-20w, cel. Ralph Wixton et al's Gorham Est. 1, nw nw sw 35-15s-16w, set 8-in csg 3255 ft. C. L. Sheedy et al's Bison 1, sw sw sw 35-16s-17w, dr 3358 ft.

RUSSELL COUNTY—Hartman & Blair's Johnson 1, nw nw nw 11-13s-15w, woc. Equity Gas Co.'s Harbauk 1, nw ne se 19-13s-12w, ru mach. El Dorado Ref. Co.'s Scott 1, nw nw ne 17-13s-13w, sd 835 ft. Joe Aylward et al's McAllister 1, ne ne se 9-12s-13w, ur 5-in csg 3425 ft.

SALINE COUNTY—James Brouk et al's Othelander 1, ne nw se 10-16s-13w, dr 2385 ft.

SEDGWICK COUNTY—Lauck's McLean 1, csw se 1-27s-1w, sd 4123 ft. R. J. Wallace et al's Sheer 1, sw sw sw 22-27s-3w, dr 3743 ft.

SEWARD COUNTY—Helmerich & Payne's Hyde 1, csw 14-31s-34w, mim.

SHERIDAN COUNTY—Roberts' Corrick 1, cnw 34-9s-26w, rur.

SMITH COUNTY—Helmerich & Payne et al's Meyer 1, ne ne sw 10-5s-11w, dr 1195 ft.

STAFFORD COUNTY—I. T. I. O. Co.'s Mellies 1, cn½ n½ ne 6-22s-11w, td 3536 ft, D&A. Skelly's Kipp 1, se se ne 27-25s-14w, set 6-in csg 3975 ft. C. E. Skiles et al's Leidigh 1, nw nw sw 21-22s-11w, dr 2550 ft. Empire et al's Jordon 1, sw sw nw 15-25s-14w, set 15-in csg 294 ft, woc.

SUMNER COUNTY—The Texas Co.'s Reed 1, ne se se 11-31s-1w, dr 4027 ft. Rosespring's Rutter 1-A, cnw nw 21-23s-2e, rur. C. L. Husted et al's Evers 1, ne se se 11-31s-1w, sd 519 ft. W. C. McBride & Olson's Kinlund 1, ne nw ne 24-34s-1e, dr 3335 ft. Empire's Hoffman 1, nw nw sw 27-34s-1e, fsg 345 ft. Graham et al's Dawson 1, nw nw nw 4-33s-2w, rig.

TREGO COUNTY—G. M. Pigott et al's Burkett 1, csw 15-11s-22w, run 5-in liner. McNeely et al's John Lemke 1, nw nw sw 7-11s-22w, td 4040 ft. York State Oil Corp.'s Gugler 1, sw sw sw 36-12s-21w, ur 6-in csg 3715 ft.

WOODSON COUNTY—Dunn & Lewis' Dawson 2, cne ne 27-26s-13e, co 825 ft. Sheedy et al's Eagen 1, ne ne se 11-26s-14e, sd 1100 ft.

SOUTH LOUISIANA

ACADIA PARISH—H. E. Dalton's Setting 1, Trilby prospect, 17-9s-1w, sd 5047 ft. Humble's Nordyke 1, Ebenezer prospect, 23-10s-1e, dk.

ALLEN PARISH—Humble's Bel 3, Bel prospect, 28-6s-7w, dr shale 2890 ft.

CAMERON PARISH — Magnolia's School Land 1, Johnson Bayou prospect, 16-15s-14w, dr shale and lime 7928 ft; same operator's R. Le Bleau 1, Big Lake area, 13-12s-8w, fsh 6803 ft. Pure's State Mallard Bay 1, Mallard Bay prospect, 22-13s-3w, dr shale 5679 ft.

EAST BATON ROUGE PARISH—Cavalier Oil Co.'s Vignes 1, ne of Hope Villa, 40-8s-2e, repairing rig 6140 ft.

IBERIA PARISH—Texas Co.'s State Fausse Point 1, Fausse Point prospect, 35-11s-8e, dr shale 6324 ft; same operator's State Vermilion Bay B-1, in Vermilion Bay, 20-15s-6e, sdtr 8893 ft.

IBERVILLE PARISH—Humble's Wilbert 1, Bayou Blue, 67-9s-11e, dr soft sand 2492 ft.

JEFFERSON DAVIS PARISH — Shell's Sturdevant 1, South Roanoke prospect, 25-10s-4w, setting 7-in protection csg 9749 ft. Stanolind's Calcasieu National Bank 1, South Jennings prospect, 15-10s-3w, woc 8600 ft.

LA FOURCHE PARISH—Wm. Helis' City of New Orleans 1, Marchland prospect, 19-23s-23e, dr shale 1820 ft. Pan American Production Co.'s Harange 1, Valentine prospect, 7-17s-20e, dk foundation.

PLAQUEMINES PARISH—Gulf's State Bay Adams 1, in Bay Adams, 32-19s-28e, dr shale 1151 ft. Tide Water's Manhatten Fruit 2, Venice dome, 26-21s-30e, dr shale 1170 ft.

ST. BERNARD PARISH—John Cartwright's Nunes 1, e of New Orleans, 10-13s-12e, sd woo 6477 ft. Gulf's Lake Lery 1, Lake Lery prospect, 28-14s-14e, mir 850 ft. Southern Sulphur Co.'s State 2, Lake Borgne area, 38-14s-15e, sd 43 ft.

ST. JAMES PARISH—Shell's Colonial Sugar 2, Hester prospect, 5-12s-5e, dr shale 4672 ft.

ST. LANDRY PARISH—Stanley Thompson's Lewis 1, ne of Port Barre, 25-9s-6e, dr shale 920 ft. Superior Oil Producing Co.'s A. Savoie 1, ne of Bosco, 26-8s-3e, lcn.

ST. MARTIN PARISH—Shell's Hefea Land Co. 1, Gecho-Arnaudville area, 38-8s-5e, ru.

ST. MARY PARISH—Mike Hogg's Bayou Teche 1, w of Charenton, 5-13s-9e, dr shale 7597 ft. Texas Co.'s State Bayou Sale 1, Wax Lake prospect, 40-7s-9e, dr shale 7625 ft.

TERREBONNE PARISH—Humble's Elender 1, Houma gas field, 23-19s-19e, dr shale 7001 ft. Shell's Realty Operators 1-B, 11 mi w of Houma, 18-17s-15e, driving piling.

VERMILION PARISH — Continental's Hebert 1, Abbeville prospect, 20-12s-3e, milling 10,810 ft. Stanolind's Fred Stovall 1, South Abbeville prospect, 89-14s-3e, dr shale 2110 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Lide Greer et al's J. D. Smalley 1, se sw ne 13-16n-5w, mim. (9000 ft test). DeSoto O&G Co.'s Dunn & Olsen 1, n½ nw 15-16n-10w, so in lime 3436 ft, dr 3903 ft. McDowell et al's Locke 1, ne nw ne 9-15n-9w, arr set csg 744 ft. Texas-Seaboard Oil Corp.'s McGee 1, 3-16n-6w, owdd, td 5905 ft.

BOSSIER PARISH — Humphrey et al's Bulkley 2, 35-21n-13w, dr 2800 ft. United Gas Pub. Serv. Co.'s Skannal F-1, 26-17n-12w, flowing 132 bbls oil daily through ¼-in choke, td 5201 ft, Petitt sand; Skannel G-1, se ne 22-17n-12w, dr 2705 ft; Roos 1, 23-17-12 (½ mi n Skannel F-1), woc 7-in csg 5108 ft, td 5209 ft. Ark.-La. Gas Co.'s McDade 1, 8-17n-11w, 9-in csg 2550 ft, dr 4041 ft.

CADDO PARISH—Prairie River Oil Synd.'s Hutchinson 1, sw sw 15-15n-12w, elev 152 ft, top Travis Peak 5845 ft, dr 7396 ft. Ferguson & Co.'s Huckabay 1, 22-22n-16w, lcn. Gulf's E. P. Hatcher 1, 11-17n-15w, elev 269 ft, top Travis Peak 5998 ft, fsg 6896 ft. Producers O&G Co.'s Currie et al 2, ne se 32-19n-16w, coring 900 ft, Nacatosh.

CLAIBORNE PARISH—E. T. Oakes' Patton Est. 2, ne ne 1-20n-5w, elev 357 ft, so in lime 7-in csg 5007 ft, coring 5082 ft, black sandy lime, sg, arr core again. Sugar Creek Synd.'s Darrett 2, se sw 31-20n-5w, fsh, td 8616 ft. United's Taylor 1, 1-19n-5w, dr 5488 ft.

DE SOTO PARISH—Sundby et al's Garland 1, se nw 7-14n-14w, arr deepen to 6000 ft, td 2260 ft. Kamon et al's Roscoe 1, se nw 14-13n-13w, 7-in csg 1092 ft, topped chalk 1625 ft, claim so&sg arr test td 1810 ft shale. M. J. Pearl Oil Corp.'s Joyner 1, se nw sw 28-11n-Grogan et al's (formerly L. S. Fites) Ramsey 1, 36-11n-11w, arr deepen 1450 ft. 12w, spd. Sanders et al's L. N. Allison 1, nec 17-14n-13w, mir.

FRANKLIN PARISH — S. C. Jensen's Bailey 1, c ne nw 12-11n-6e, sd 2285 ft.

MOREHOUSE PARISH—Henry E. Rondeau et al's E. M. Clarke 1, ne se 10-22n-7e, elev 180 ft, top red beds 2874 ft, sd 3871 ft.

NATCHITOCHES PARISH — Natchitoches Oil Co.'s J. S. Simpson 1, 12-17n-7w, sd 50 ft. Lent et al's Locke 1, se sw 26-9n-9w, spd. C. D. Morrison's Moffitt 1, se se 19-10n-10w, sd 220 ft. Union Pet. Co.'s DeBlieux 2, 83-10n-7w, dr 3632 ft. A. J. Williams' Coats 1, 31-10n-10w, Rog.

RED RIVER PARISH—Hunter et al's Long-Bell Lbr. Co. 1, ne ne 19-13n-9w, 7-in csg 3696 ft, bailed sw, retesting with gas, td 3734 ft, red beds.

RICHLAND PARISH—Gulf's R. R. Rhymes 15, nw se ne 32-17n-6e, elev 77 ft, top anhydrite 2936 ft, base red beds 6380 ft, dr 7865 ft, hd red shale.

SABINE PARISH—Whitehurst et al's Whitney Corp. 1, c nw ne 8-9n-13w, co preparatory to running 5¾-in csg td 5503 ft. A. H. Tarver's Baker 3, ne nw 36-8n-12w, showed sw sd 6178 ft.

WEBSTER PARISH—Ohio Oil Co.'s Bodcaw Lbr. Co. 1, c ne se 28-21n-10w, dr 6340 ft. R. M. Coyle 1, c ne se 22-21n-10w, dr 6279 ft. United's Nixon 1, 22-21n-10w, dr 6486 ft. C. V. Davis 2, c nw nw 23-21n-10w, dr 6225 ft. Magnolia's Cox 1, 23-21n-10w, dr 5935 ft. R. W. Norton's Fee 1, 27-21n-10w, mim. Woodley Pet. Co.'s R. R. Cox sw sw 23-21n-10w, dr 5340 ft; L. C. Cox 1, 28-21n-10w, dr 2115 ft. L. R. Skidmore's Barnett 1, 29-17n-9w, arr deepen 1650 ft. Seaboard Oil Corp.'s Cotton Valley L&T Co. 1, nw sw 35-22n-10w, woc surf csg. Tidewater Oil Co.'s L. Pipes 1, 10-18n-10w, mim.

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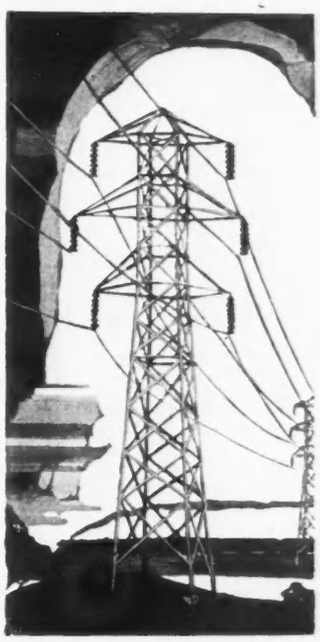

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MICHIGAN

ARENAC COUNTY—McClanahan Oil Co.'s Mee 1, 11-20n-4e, dr 1740 ft; Seignious 1, 3-20n-4e, csd 5-in 2590 ft. Central Drilling Co.'s Fisk 1, 16-19n-4e, dr 400 ft.

CLARE COUNTY—Wittmer Oil Co.'s Musgrove 1, 15-24n-1w, dr 310 ft.

CLINTON COUNTY — St. Louis Pipe & Supply Co.'s Harris 1, 14-7n-2w, dr 2667 ft. Petroleum Exploration's Schneeberger 1, 11-5n-2w, sd 90 ft; Jensen 1, 6-5n-1w, dr 800 ft. Stork Oil Co.'s Parker 1, 25-7n-1w, dr 2570 ft.

GLADWIN COUNTY — J. V. Wicklund's State A-1, sw sw se 11-18n-1w, rig. D. F. Jones' Doane 1, 33-18n-1e, dr 3200 ft. Muskegon Development Co.'s Wineman 1, 33-18n-1w, dr 1400 ft.

GRATIOT COUNTY—Ed Swearer's Alexander 1, 8-12n-2w, dr 3300 ft. H. L. McEboy's Palmeter 1, 18-19n-1w, sd 400 ft. Chas. Anderson's Askergrad 1, 9-9n-1w, dr 340 ft. Ithaca Exploration's Hart 1, 10-10n-3w, dr 2700 ft. Cartier Oil Co.'s McConkie 1, 23-11n-2w, dr 1690 ft. Herb Snell's Smead 1, 20-11n-4w, dr 2600 ft.

HILLSDALE COUNTY—Jacob Beck's Fee 1, 16-6s-3w, dr 2030 ft.

IOSCOX COUNTY—J. H. Barton's Goupil 1, 9-21n-5e, sd 3055 ft.

ISABELLA COUNTY—Snyder Drilling Co.'s Fritz 1, 14n-6w, dr 2670 ft. Mountain Oil & Gas Co.'s Thompson 1, 17-15n-6w, Marshall 1342, red 1574 ft, csg 6-in 1680 ft. McClanahan Oil Co.'s Cook 1, 15-16n-5w, dr 3700 ft.

MECOSTA COUNTY — Taggart Brothers' Waters 1, 28-16n-8w, dr 2700 ft. Aken & Hubard's Flowers 1, nw nw se 33-15n-7w, rig. Marquette River Oil Co.'s Nimbauger 1, sw ne sw, 27-13n-9w, rig.

MISSAUKEE COUNTY — M. J. Ingold's Donley 1, 31-22n-8w, dr 1990 ft.

MONTCALM COUNTY — L. T. Barber's Rice 1, 20-12n-7w, dr 2800 ft. Daily Crude Oil Co.'s Weatherby 1, 20-12n-9w, dr 1900 ft.

MUSKEGON COUNTY — John Stonert's Drost 1, 34-11n-16w, sd 2140 ft, hfsw.

OSCEOLA COUNTY—M. B. Keeler's Beall 1, 24-18n-9w, sd 1007 ft. Dibble Brothers' Townsend 1, 4-20n-17w, dr 890 ft.

OTSEGO COUNTY—Harley Williams' Raae 1, 15-30n-1w, fsg 2250 ft.

ROSCOMMON COUNTY—Fletcher & Leyman's Childers 1, 15-24n-1w, dr 2500 ft. North Michigan Oil Co.'s Hartwick 2, 31-24n-4w, rig.

SAGINAW COUNTY—Hume Oil Co.'s Schwigner 1, 5-11n-6e, dr 1000 ft. Jaenickie Oil Co.'s Moulton 1, 31-12n-2e, dr 1800 ft. Monitor Oil Co.'s Turnwald 1, 32-9n-4e, dr 200 ft. C. W. Teater's Kilbourne 1, 35-12n-1e, dr 1130 ft.

WAYNE COUNTY — R. E. Leatherman's Scheffler 1, 26-3s-8e, sd 1100 ft.

MISSISSIPPI

BOLIVAR COUNTY—White & Jones' Ballou 1, ne ne 18-24n-7w, arr core 1680 ft.

CLAIBORNE COUNTY—Claiborne County Dev. Co.'s Ruth Hayden 1, 56-11n-2e, lcn. Claiborne O&G Co.'s Crawford 1, 6-13n-4e, sd for fuel 1702 ft.

GRENADA COUNTY—H. T. Salter et al's Carpenter 1, nw se 5-21n-7e, repr dk.

HINDS COUNTY—Chichester et al's Gerwin 1, sw nw 12-5n-4w, sd 525 ft.

KEMPER COUNTY—R. A. Keaton et al's Buckwalter Lbr. Co. 1, nec 6-10n-14e, dk.

LAMAR COUNTY—Sun's Scanland & Semmes 1, c sw ne 28-4n-15w, elev 317 ft, hole clean arr deepen td 1636 ft. Snow-Black Pet. Co.'s Miller et al 1, ne ne sw 3-4n-15w, dr 3305 ft.

PERRY COUNTY—Fred E. Courson's Newman Lbr. Co. 1, nw nw 26-1n-9w, 10-in csg 180 ft, dr 1219 ft.

SIMPSON COUNTY—Goodwill O&G Co.'s Berry 1, 33-2n-4e, dk & rog.

WILKINSON COUNTY—T. S. Stoneman et al's L. T. Ventress 1, ne sw 38-2n-3w, 10¾-in csg 799 ft, dr 630 ft.

YALABOUSHA COUNTY—G. M. Langston et al's W. C. Bryant 1, ne sw 21-24n-6e, elev 276 ft, dk & Mir.

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MONTANA

CARBON COUNTY—East Bridger Oil & Gas Co.'s 1, csl se se 23-6s-23e, dr 978 ft. Round Butte Oil & Gas Co.'s 2, cwl nw se 3-6s-23e, dr 463 ft in Colorado shale.

FERGUS COUNTY—Emmons et al's 3, se ne ne 6-21n-18e, dr 455 ft. Judith Operating Co.'s Government 2, cwl nw ne 35-22n-17e, dr 3091 ft.

JUDITH BASIN COUNTY — Fletcher P. Hunt's Hobson 3, se 30-14n-15e, dr 1324 ft.

PETROLEUM COUNTY—H. Clark Rowland et al's Kalispell 1, se ne ne 25-15n-25e, dr 499 ft.

TOOLE COUNTY—Parr Oil Co.'s Reynolds 1, sw ne nw 31-34n-4w, abd 2685 ft.

YELLOWSTONE COUNTY — R. C. Tarrant's Mosser 1, cwl nw ne ne 26-3e-24e, dr 2545 ft. Tarrant's Metzger 1, csw nw 8-2s-25e, preparing to test sg in Dakota at 1060 ft after pb from 1107 ft.

NEBRASKA

FRANKLIN COUNTY—William Stienle's 1, se ne se 25-1n-15w, dr 310 ft.

GRANT COUNTY — Byrd-Frost, Inc., and the Magnolia Petroleum Corp.'s Abbott 1, ne nw 22-24n-38w, abd as dry hole at 4040 ft on encountering granite.

SIOUX COUNTY — J. M. Huber Corp.'s Morgan 1, csw sw 32-35n-56w, dr 1801 ft.

SOUTH DAKOTA

FALL RIVER COUNTY—South Dakota Oil Co.'s Carl Knude 1-X, sw ne se 20-10s-4e, dr 3562 ft.

NEW MEXICO

LEA COUNTY—Argo Royalty Co.'s B. T. Lanehart 1, sw se ne 21-25s-37e, elev 3071 ft, dr 3590 ft. Baldridge et al's Blakey 1, c nw ne 5-20s-38e, elev 3586 ft, sd 1654 ft. Brown and Reynolds' Parcell 1, c nw se 8-21s-38e, elev 3573 ft, dr 1350 ft. Carlock et al (was Talbot & Mullineaux's) Quincy-Ricker 1, c se se 7-16s-36e, dr 1250 ft. Amon G. Carter et al's Elliott 1, c nw nw 22-22s-37e, lcn. C. G. Oil Co.-The Texas Co.'s Ellen Weir 1, c ne ne 14-20s-37e, elev 3564 ft, td 4074 ft, swabbed 53 bbls. fluid, 40 percent bs&W, 10 hrs, testing. J. C. Clower et al's W. H. Turner 1, c se se 29-21s-37e, elev 3469 ft, fsh 3483 ft. Barney Cockburn & Rowan-Nichols Oil Co.'s H. G. Mattern 1, c sw se 7-22s-37e, elev 3426 ft, td 3789 ft, testing. Conoco & California Co.'s E. M. Elliott 1-A-15, se se se 15-22s-37e, elev 3354 ft, flows by heads, fsh tools after shot, td 3556 ft; Ira C. Forney 1-A-5, c sw se 5-23s-36e, rur; Rex Williams 1-A-27, c sw sw 27-23s-35e, rur. Culbertson, Erwin & Stovall's J. R. Stuart-Repollo 2, nw se se 10-25s-37e, elev 3108 ft, dr 3110 ft. Devonian Oil Co.'s A. L. Christmas 1, ne ne se 28-22s-37e, dk. Empire O&R Co.'s Sim Dabbs 1, c nw nw 23-25s-37e, elev 3086 ft, dr 2500 ft; Anna Walden 1, c se nw 21-22s-37e, elev 3352 ft, dr 2210 ft. Emperor Oil Co.'s State 1, c sw sw 5-21s-35e, elev 3652 ft, dr 3400 ft. A. R. Eppenauer Drl. Co.'s F. B. Stuart-Amerada 1, ne nw ne 22-25s-37e, elev 3082 ft, sp and sd. J. E. Farrell & Co.'s Walden-Amerada 1-C, c sw sw 15-22s-37e, elev 3385 ft, dr 1180 ft; Walden-Amerada 1-A, c sw nw 15-22s-37e, sp and sd. Geo. F. Getty Oil Co.'s D. C. Hardy 1, c se se 20-21s-37e, rur. Harry W. Leonard et al's B. T. Lanehart 3, c ne nw 21-25s-37e, elev 3081 ft, min. Magnolia Pet. Co.'s E. O. Carson 3, c sw sw 28-21s-37e, rig; State 1-G, nw nw ne 24-17s-34e, min. Maljamar O&G Corp.'s Baish 7, c se nw 21-17s-32e, dr 460 ft. Joe C. Maxwell, R. Crandall & C. H. Osmond's State 1, c sw nw 32-10s-34e, dr 2150 ft. N. G. Penrose & Rowan-Nichols Oil Co.'s Will Cary-Humble 3, c se nw 22-22s-37e, elev 3364 ft, sd 1150 ft. Plains Prod. Co.'s J. A. E. Knight-Humble 2, c nw sw 22-24s-37e, elev 3234 ft, dr 1400 ft; Knight-Humble 3, c se se 21-24s-37e, rig; Knight-Humble 4, c sw sw 22-24s-37e, min. Repollo Oil Co.'s O. J. Boyd 2, nw nw nw 23-22s-37e, elev 3338 ft, cem cas 2113 ft; Jamison 1, sw se ne 21-24s-37e, elev 3227 ft, cem cas 3060 ft; A. M. York 1, se se ne 20-21s-37e, elev 3495 ft, cem 8⅝-in cas 1255 ft. Rushwold Oil Co.-Conoco & California Co.'s E. E. Carter 1, c nw ne 30-20s-39e, dr 385 ft. Samedan Oil Corp.'s S. B. Hughes 1, c ne sw 4-23s-37e, elev 3321 ft, sd to pump, td 3648 ft; Hughes 2, c nw se 4-23s-37e, machine. Shell Pet. Corp.'s Black 1, c nw ne 21-24s-37e, dr 720 ft. Skelly Oil Co.'s G. W. Sims 1, c ne nw 10-23s-37e, elev 3301 ft, dr 3510 ft; Hugh C. Sims 1-D, c se nw 3-23s-37e, dr 770 ft; W. P. Sims 1, c ne ne 10-23s-37e, elev 3298 ft, dr 3550 ft; W. P. Sims 1-B, c nw ne 10-23s-37e, dr 150 ft; F. S. Stuart 1-A, near c ne nw 15-25s-37e, elev 3105 ft, dr 2820 ft; R. R. Sims 1-C, c se sw 3-23s-37e, machine; R. R. Sims 2-C, c ne sw 3-23s-37e, mim. Stanolind O&G Co.'s P. J. Langley 1, c se nw 15-25s-37e, elev 3109 ft, shot 150 qts 3364-3413 ft, flowing 20 bbls hourly. W. H. Street et al's Wood-Humble 1, near c se

ne 22-22s-37e, elev 3355 ft, dr by cas td 1174 ft. Sun Oil Co.'s I. R. Stuart 2, c sw ne 15-25s-37e, mim. The Texas Co.'s Jas. F. Black 1, c sw ne 21-24s-37e, elev 3225 ft, dr 1020 ft; J. D. Young 1, se se se 5-24s-37e, elev 3277 ft, show gas, dr 3100 ft. Tide Water Oil Co.'s Coates 1-B, c nw nw 21-25s-37e, elev 3073 ft, dr 2830 ft.

ROOSEVELT COUNTY — Franklin Oil Corp.-Flynn, Welch & Yates' Rual Giphant 1, nw nw nw 28-3n-30e, elev 4458 ft, re-cem 12½-in cas 1030 ft, dr 1770 ft. Joe C. Maxwell, Inc., R. Crandall & C. H. Osmond's A. B. Williamson 1, c nw nw 7-8s-36e, rig. Claudell Dev. Co.'s Wilmes 2, c se ne 17-2s-30e, bldg road.

OKLAHOMA

ATOKA COUNTY—A. J. Sander's Redden 3, se sw sw 19-1n-15e, td 890 ft, sd.

BECKHAM COUNTY — Mid-American Oil Co.'s Biscoe 1, sw se ne 27-6n-10w, sdo 2000 ft.

CARTER COUNTY—The Texas Co.'s Cathey 1, se ne ne 6-5s-1e, woc.

CLEVELAND COUNTY—H. R. Hollenback et al's Stinson 1, nw nw ne 17-9n-2w, rig. Helmerich & Payne's Glenn 1, cnw ne 6-8n-1w, rig corners.

COAL COUNTY—Sinclair Prairie Oil Co.'s Culver 1, ne ne sw 16-1n-8e, td 5010 ft, testing. Continental's Kirby 1, sw se sw 23-1n-8e, td 1925 ft, sdo. Continental's Breedlove 1, nw sw sw 24-1n-8e, dr 3510 ft. Carter's Warne 1, ne ne nw 31-3n-9e, cor 3868 ft. Continental's Daniels 1, sw ne sw 27-1n-9e, dr 2405 ft. Continental's King 1, ne sw ne 26-1n-8e, woc. Shell Pet. Corp.'s Hill 4-A, cnw 30-3n-10e, cor 4159 ft.

COMANCHE COUNTY—L. D. Wise et al's Cones 1, se se sw 11-1n-10w, sd. Frank Scott's Kuntz 1-A, cse ne se 21-4n-11w, dr 337 ft.

COTTON COUNTY—Phillips Pet. Co.'s Warren 1, ne ne se 1-5s-13w, dr 2285 ft.

GARFIELD COUNTY—Ohio's McFarland 1, se se se 25-24n-3w, rig.

GARVIN COUNTY—Ellison & Hammond's Selby 1, cnw nw 24-2n-3w, td 166 ft, sd. Pure Oil Co.'s Baker 1, se se ne 7-2n-1e, dr 3700 ft.

GREER COUNTY—Nelf et al's Melton 1, cse nw se 16-3n-22w, loc.

HARMON COUNTY—Lioalko Trust, Ltd.'s, Crasnoe 1, se se sw 14-3n-25w, td 2980 ft, sd.

HUGHES COUNTY—T. P. McAdams & Barnes' Koch 1, sw ne ne 1-9n-10e, set whipstock 2985 ft. R. K. Ellison's Peters 1, se nw se 8-6n-10e, dr 267 ft. Mid-West Oil Co.'s Turner-Lucas 1, cse nw 13-9n-9e, dr 485 ft.

JEFFERSON COUNTY—Red River Oil Co.'s Trout 1, se ne ne 6-8s-7w, dr cem 2160 ft. Pearson's Douthitt 1, ne ne ne 24-6s-9w, dr 4180 ft. Mid-Continent Pet. Corp.'s Reid 1, csw nw 32-6s-4w, td 40 ft, woc. Massad & Swansberger's Barrett 1, ne se se 14-6s-6w, spd 12 ft.

JOHNSTON COUNTY—Patten et al's McCrummens 1, sw sw ne 16-1s-6e, dr 295 ft.

KAY COUNTY—Mac Kelley's Johns 1, nw nw nw 35-27n-4e, dr 1820 ft.

KIOWA COUNTY—Travis & Scott's Doyle 1, ne se sw 21-5n-17w, td 937 ft, mmo. Argus Pet. Co.'s Osbourne 1, nw nw ne 9-7n-16w, td 1015 ft, co. Lykins et al's Aetna Life 1-A, se se se 8-5n-16w, td 750 ft, sd. J. M. Young et al's Cooke 1, ne ne nw 33-2n-16w, dr 560 ft.

LeFLORE COUNTY—McGraw et al's Tidwell 1, cnw se 17-3n-22e, run 10-in csg 1900 ft.

LINCOLN COUNTY—Kemp & Continental's Lobaus 1, nw sw nw 21-17n-5e, rig Skelly's Sporn 1, nw ne sw 21-17n-3e, rur.

LOGAN COUNTY—Anthony & Marshall's Fruin-Eckman 1, se se sw 4-16n-1e, co 4955 ft. Helmerich & Payne's Hassler 1, nw nw se 14-16n-4w, dr 4210 ft.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, 1800 fih, rust.

MARSHALL COUNTY—Magnolia Pet. Co.'s Gardner 1, cne ne nw 34-6s-6e, dr 620 ft.

McINTOSH COUNTY—Stanolind & Ramsey's Tiger 1, nw nw sw 13-19n-15e, dr 3798 ft.

MURRAY COUNTY—Hernsby & Jones' Sadler 1, ne ne nw 20-1n-2e, td 2674 ft. Power Oil Co.'s Lancaster Trust Co. 1, csw ne 10-1s-2e, td 3002 ft, sd for csg.

NOBLE COUNTY—Shell et al's Moelling 1, csw nw 31-21n-2w, dr 543 ft.

OSAGE COUNTY—Chavalier & Simon's No. 1, se se se 24-23n-9e, dr 1030 ft.

PITTSBURG COUNTY — Oklahoma Dist. Co.'s Beeler 1, ne ne sw 7-7n-14w, dr 3436 ft.

PONTOTOC COUNTY—H. H. Diamond et al's Fee 1, se se se 30-5n-8e, dr 475 ft. Caloma Oil Corp.'s Brentz 1, se ne sw 4-1n-6e, td 503 ft, sd.

SEMINOLE COUNTY—Rudco O&G Co.'s Butner 1-A, ne ne sw 15-9n-8e, sd 1950 ft. Amerada et al's Yarhola 1, ne nw nw 36-10n-7e, td 3638 ft, woc. A. I. Spears' Keaton 1, nw nw nw 6-5n-8e, rig.

STEPHENS COUNTY—Ed Parson's Olson 1, csw sw 21-2n-8w, dr 5025 ft. The Texas Co.'s Bohanan 1, ne nw nw 15-3s-15w, mach. T. M. McCasland's Hildebrand 1, sw sw ne 1-3s-1w, sd 4601 ft. McCasland's Hildebrand 2, cnw ne 1-3s-7w, dr 1550 ft. Coline Oil Co.'s Johnson 1, csw se nw 1-2n-8w, dr 2500 ft. Edward's Frederick 1, ne se nw 31-2n-8w, spd&der. Jack Cohen's Pierce 1, cne nw 24-2s-6w, der.

TILLMAN COUNTY—Beal & Toler's Magell 1, se se se 18-1n-16w, td 595 ft, mom. Eugene Skinner's Oliver 1, se se nw 22-1s-15w, dr 1249 ft. I. T. I. O. Co.'s Drumm 1, csw nw 32-2s-17w, rur.

WEST TEXAS

ANDREWS COUNTY — Grisham - Hunter Corp.'s Ratliff-Bedford 1, c nw¼ sec 34, blk 73, USL sur, elev 3254 ft, top anhydrite 1554 ft, top salt 1585 ft, dr 3720 ft. Wm. F. Hanagan et al's C. W. Logsdon-Amerada 1, c sw¼ sec 5, blk A-32, PSL sur, rur, td 100 ft. R. H. Henderson et al's J. E. Parker-Shell 1, Jas. Hobelis sur, blk 111, top anhydrite 1760 ft, top salt 1865 ft, lime pay 4490-4555 ft, shot 660 qts nitro 4190-4555 ft, co and no flow. Humble's R. M. Means 8, c nw ne sec 14, blk A-20, PSL sur, top anhydrite 1940 ft, top salt 1970 ft, used 4000 gals acid, td 4555 ft, pumped 166 bbl initial; R. M. Means 9, sec 3, blk C-45, PSL sur, dr 1030 ft. Sun Oil Co.'s J. S. Means 1-B, c se nw sec 22, blk A-35, PSL sur, dr 3990 ft. Sinclair Prairie's W. F. Cowden 1, se¼ sec 12, blk 44, T&P sur, T-2-N, lcn. J. W. Tripplehorn et al.'s Jessie Brown 1, SEc sec 7, blk A-46, PSL sur, elev 3205 ft, top anhydrite 1670 ft, top salt 1695 ft, dr 3550 ft.

BORDEN COUNTY—John I. Moore et al.'s Clayton-Johnston-Conoco 1, near c se¼ sec 20, blk 32, T&P Ry. sur, T-4-N, elev 2564 ft, air pocket 2512-22 ft, top lime near 3031 ft, sul w 3449-3450 ft, dry and abd.

BREWSTER COUNTY—Floyd C. Dodson et al's Texas American Synd. 1-A, c ne ne sec 66, blk 10, GH&SA Ry. sur, elev 4228 ft, top Delaware shale 2297 ft, fsh tools 3690 ft. Tony Hess et al's Mrs. M. Decie 1, sec 7, blk 1, Georgetown RR Co. sur, sd 410 ft.

COCHRAN COUNTY—Honolulu Oil Corp.-Cascade Pet. Co.'s Duggan Bros. 1, c labor 13, league 55, Oldham County School Lands, elev 3693 ft, top anhydrite 2210 ft, top salt 2405 ft, top Yates sand 2910 ft, top lime pay 5025 ft, sul w 5080-5098 ft, pb to 5063 ft, shot 160 qts nitro at 5019-5060 ft, damaged casing show, flows 100 bbls. oil daily.

COKE COUNTY—Homer E. Ogden et al's E. C. Rawlings 1, SWc sec 391, blk 1-A, H&TC Ry. sur, lcn.

CRANE COUNTY—American Liberty Oil Co.-Truett Cranfill's J. B. Tubb-Humble 3,

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HOUSTON READY-CUT HOUSE CO.

HOUSTON, TEXAS

NWc S½ sec 11, blk B-27, PSL sur, rig. Big Basin Pet. Co.'s Jax Cowden 1, NEc nw ne sec 77, blk X, elev 2456 ft, top salt 548 ft, sd 3014 ft. Gulf Oil Corp.'s M. B. McKnight 2, c ne¼ sec 9, blk B-21, PSL sur, top anhydrite 416 ft, top salt 585 ft, td 3633 ft, sr 3595 ft; W. N. Waddell et al 2, c ne sw sec 18, blk B-21, USL sur, elev 2620 ft, top sand 1620 ft, top Simpson lime series 5995 ft, top Ellenberger lime 6507 ft, tested sul w on dst at 6590-6709 ft, will pb to 6100 ft to test. Gulf & T. B. Cranfill's J. B. Tubb 3, SEc sec 9, blk B-27, PSL sur, top salt 540 ft, dr 2600 ft. Humble's J. B. Tubb 4, SWc nw¼ sec 10, blk B-27, PSL sur, swabbing 4420 ft; Tubb 5, NWc sec 11, mim. Loffland Bros. et al's J. B. Tubb-Gulf 2, SEc n½ sec 9, blk B-27, PSL sur, elev 2551 ft, testing 4650 ft. John I. Moore et al's T. C. Barnsley 1, c sw¼ sec 43, blk 32, PSL sur, elev 2472 ft, top anhydrite 500 ft, top salt 680 ft, top brown lime 2505 ft, top sulphur water in big lime 4555 ft, base Permian lime 5715 ft, dr lime 6255 ft. Sawyer Drl. Co.'s M. B. McKnight 1, sec 11, blk B-17, PSL sur, lcn.

CROCKETT COUNTY—John I. Moore et al's A. C. Hoover 1, SEc sec 4, blk "FF," B&B Ry. sur, dr 1610 ft. Anderson Oil Co.'s Todd-Southland Royalty 1, SWc sw¼ sec 27, blk WX, GC&SF sur, pb fr sul w 1644 to 1620 ft, testing.

JEFF DAVIS COUNTY—C. M. "Dad" Joiner et al's Jones-Coffield 1, ne¼ sec 8, blk 3, H&TC Ry. sur, elev 4956 ft, td 5022 ft, pb to 2140 ft, then dry and abn.

DAWSON COUNTY—Ray Albaugh et al's John Robinson 1, c nw¼ sec 46, blk M, EL&RR sur, elev 3085 ft, top salt 1970 ft, top lime 4567 ft, top 1st lime pay 4958 ft, sd 5038 ft, 4000 ft fluid in hole, may shoot.

ECTOR COUNTY—Barnsdall Oil Co.'s H. C. Foster 2, NWc sw¼ sec 13, blk 43, T&P Ry. sur, T-2-S, elev —— ft, top lime pay 4063 ft, shot 400 qts 4050-5212 ft, td 4222 ft, est. 125 bbls. oil daily. Broderick & Calvert, Inc.'s, J. L. Johnson 1, SWc s½ s½ sw¼ sec 12, blk 43, T-2-S, dr 4250 ft. American Maracaibo Co.'s C. Scharbauer 1, SWc sec 19, blk 44, T&P sur, T-1-N, mim. Continental Oil Co.'s W. P. Edwards 1, SWc sec 32, blk 44, T&P Ry. sur, T-3-S, Waddell area, elev 2816 ft, top anhydrite 1220 ft, salt series 1320-2200 ft, dry and abn in sul w at 3696-3700 ft. Devonian Oil Co.'s C. Scharbauer 1, SWc, se¼ sec 34, blk 44, T-1-N, cem cas 245 ft. Empire O&R Co.'s H. E. Cummins 1-C, NEc sec¼ sec 22, blk 45, T&P Ry. sur, T-1-N, elev 3213 ft, lime pay 4196-4293 ft, flows 100 bbls. oil daily, sd for acid Grisham-Hunter Corp.'s R. B. Cowden 1, c nw sw sec 10, blk 45, T&P Ry. sur, T-2-N, elev 3302 ft, top Yates sand 2775 ft, top lime 3810 ft, pb fr sul w at 4657 ft to 4430 ft, acidized and flows 8 bbls. oil daily. Humble's W. F. Cowden 1, c nw sw sec 30, blk 44, T-1-N, sp. Schermerhorn Oil Corp.'s J. L. Johnson-Amerada 1, SEc sec 11, blk 43, T-2-S, dr 2770 ft. Shasta Oil Co. et al's C. Scharbauer 1, SWc nw¼ sec 29, blk 44, T-1-N, dk. Sinclair Prairie's J. L. Johnson 1-A, NEc nw¼ sec 42, blk 42, T&P Ry. sur, T-1-S, elev 3005 ft, top anhydrite 1760 ft, top Yates 2870 ft, top lime 2860 ft, dr 5320 ft. Shell Pet. Corp.'s E. F. Cowden 1, c se se sec 26, blk 44, T&P Ry. sur, T-2-S, dr 3875 ft. Stanolind's E. F. Cowden 2-B, c ne ne sec 10, blk 43, T-2-S, elev 2967 ft, sul w 4449-4451 ft, pb to 4431 ft for shot. R. L. York-O. C. Harper et al's H. C. Foster 1, sec ne¼ sec 13, blk 43, T-2-S, dr by tools 4119 ft; Foster 2, dr 2380 ft; J. D. Slater 1, c nw nw sec 26, blk 45, T&P Ry. sur, T-1-S, elev 3249 ft, top anhydrite 1580 ft, dr 4365 ft; R. L. York 1, c ne ne sec 10, blk 44, T&P Ry. sur, T-3-S, elev 3059 ft, top anhydrite 1700 ft, top salt 1725 ft, top Yates 2873 ft, top lime 3807 ft, dry and abn in sul w 4328-4330 ft. York-Harper & Sloan & Zook Co.'s H. C. Foster 1, swc sec 8, blk 42, T-2-S, lcn. Weekley Oil Corp.'s E. F. Foster 1, nwc sec 13, blk 43, T-2-S, dr 1850 ft.

EL PASO COUNTY—Tri-State Oil Co.'s Chas. & L. M. Kinkel 1, nec sec 237, S. F. No. 7232, co 2415 ft.

FISHER COUNTY—L. A. Daniel, Tr. and J. B. Rhoads' Mrs. J. R. Nickless 1-A, nec 81-ac lse, G. W. Lawrence sur, elev 1912 ft, cavey hole 1415 ft. Forrest Development Co.'s A. M. Dry 1, near c sw se sec 108, blk 2, H&TC Ry. sur, elev 2087 ft, re-cem cas, td 4354 ft.

GAINES COUNTY—Amerada Pet. Corp. et al's S. J. Averitt-Ohio 1-A, c ne ne sec 228, blk G, W. T. Ry. sur, elev 3318 ft, top anhydrite 1959 ft, top salt 2024 ft, dr 4850 ft. Stanolind's Dewey Davis 1, c nw se sec 18, blk A-21, PSL sur, elev 3282 ft, top anhydrite 1956 ft, top Yates sand 2965 ft, trace oil 4827-30 ft, dr 4915 ft; J. A. Morrow 1, sw¼ sec 20, blk A-24, PSL sur, cem sur cas.

GARZA COUNTY—Gar-Tex O&G Co.'s Post 2, sec 6, blk 5, K. Aycock sur, used 2000 gals acid, td 2804 ft, testing. Grisham-Hunter Corp.'s Post 1, sec 6, blk 5, K. Aycock sur, dr 475 ft.

GLASSCOCK COUNTY — California Co.'s Honolulu Oil orp.'s Steve Calverley 1, swc ne sw sec 25, blk 35, T&P Ry. sur, T-3-S, elev 2625 ft, top anhydrite 1080 ft, top lime 2720 ft, top Yates sand 1892 ft, dry and abn in sul w 3416-3454 ft. Fleetborn Oil Corp. et al's Black Arrow Oil Co. 1, nec 160-ac lse, sec 13 blk 34, T&P Ry. sur, T-3-S, machine; A. A. Coulson 1, swc 160-ac lse, sec 19, blk 33, T-3-S, machine. Shell Pet. Corp.'s L. S. McDowell 1, s½ sec 41, blk 34, T&P Ry. sur, T-2-S, lcn.

TOM GREEN COUNTY—Spinner Oil Co.'s A. & B. W. Reed 1, swc 137-ac lse, sub-div 39, Collyns Ranch, or Mayson & Perry sur, dr 2800 ft. Ray & F. E. Webb et al's J. F. Schrievner 1, nwc 236-ac lse, A. Krending sur No. 1663, dr 540 ft. E. P. Campbell's et al's D. B. Horne 1, Washington Ry. sur, No. 137, lcn.

HOCKLEY COUNTY—The Texas Co. et al's Bob Slaughter 1, labor 83, league 38, Zavala County School Lands, elev 3560 ft, top anhydrite 2240 ft, top Yates 2850 ft, td 3065 ft, cem 8⅝-in pipe.

HUDSPETH COUNTY—Costello Oil Corp.'s L. S. Costello 1, swc sw¼ sec 36, blk 70, T&P Ry. sur, No. 1879, elev 4075 ft, lcn. Haymon Krupp Oil & Land Co.'s S. J. Thaxton 1, near sec ne se sec 34, blk 74, T&P Ry. sur, Tsp. 6, sd 1980 ft.

JONES COUNTY—Humble O&R Co.'s J. M. Alexander 1, sw part 1127-ac lse, W. C. Walker sur, sp. Cliff Camp et al's O. E. Woodson 1, sec 37, D&DA sur, dry and abn 2512 ft. P. E. Glenn et al's Carlton 1, sub-div 26, league 336, McMullen-McGlorn sur, lcn abd. Chas. Gyr and S. L. Davis' L. E. Clayburn 1, nec 80-ac lse, sub-div 27, H. Millard sur, dr 1240 ft. Thos. D. Humphrey et al's Guitar 1, lcn. Chas. J. Kleiner et al's Birt Fields 1, S. Andrews sur No. 191, dr 300 ft. N. H. Martin & Son's Spurrier 2 (160-ac), W. C. Walker sur, 3 mi n Nugent, dr 1740 ft. Merry Bros. & Perini, Inc.'s, J. H. White 1, nwc 40-ac lse, sec 6, blk 1, T&P Ry. sur, testing 2335 ft. F. A. Oyster, A. R. Foster & Ungren-Frazier's C. H. King 1, nw part sec 16, N. Scott sur, A-303, dr 2000 ft. E. A. Ungren & A. J. Frazier's W. Davis-L. A. Stemmons 1, nwc 161-ac lse, sec 3, blk 7, F. M. Smythe sur, dr 950 ft.

LOVING COUNTY—Mason Oil Co.'s Minnie Kyle 2, swc ne¼ sec 20, blk 55, T&P Ry. sur, Tsp. 1, co 1787 ft. Porter Rankin et al's T&P Ry. sur, Tsp. 1, elev 2904 ft, top Dela-W. D. Johnson 1, nw¼ sec 12, blk 57, ware lime 3119 ft, top sand 3151 ft, td 3214 ft, co after 40 qts shot 3138-78 ft.

PECOS COUNTY — Anderson Oil Co.'s White-Baker 1, swc sec 32, blk Z, T. C. Ry. sur, elev 2055 ft, top salt 1154 ft, dry and abd in sul w 2282 ft. Bahan & Rhodes' H. E. Bonebrake 1, sw nw ne sec 111, blk 8, H&GN Ry. sur, elev —— ft, top salt 922 ft, top lime 1600 ft, sd for machine 1613 ft; Bonebrake 1-B, w¼ sec 116, blk 8, H&GN Ry. sur, lcn. Harry Baldwin, Groebl Bros. & Robertson's I. G. Yates-Texon 3, sec 55, blk 1, I&GN Ry. sur, trace oil 1535-42 ft, dry and abd in sul w 1562 ft. R. O. Clark et al's Mrs. E. C. Powell 1, w cor sec 96, blk 10, H&GN Ry. sur, sd 1846 ft. Culbertson, Irwin et al's Iowa Realty Trust 1, sec 73, blk 10, H&GN Ry. sur, dr 700 ft. A. H. Flaherty & Son's J. C. Cunningham-Sun 1, nwc sw¼ sec 25, blk 11, H&GN Ry. sur, sd 100 ft. Marion Production Co.'s W. Courtney 5, nwc sec 78, blk OW, T. M. Ry. sur, sd 1378 ft; SW Life Insurance Co. 1, swc sec 73, blk OW, T. M. Ry. sur, sd 1425 ft. E. R. Minshall et al's J. B. Baker 1, near c sw nw sec 25, blk 146, T&StL Ry. sur, dr 2820 ft. Stanley A. Thompson et al's Elsinore Cattle Co. 1, se¼ sec 53, blk D, GC&SF Ry. sur, elev 3938 ft, dr 3630 ft. Tex-Mex Pet. Corp.'s McKee 1, nwc tr 7, sec 24, blk 9, H&GN Ry. sur, elev 2384 ft, sd for cas 2690 ft. Trans-Texas Oil Co.'s C. M. Caldwell 2, near sec sec 27, blk 50, T&P Ry. sur, Tsp. 9, dr 830 ft; F. M. Gallagher 1, nec nw sec 9, blk 51, T&P Ry. sur, Tsp. 10, dr 1255 ft; Popham Land & Cattle Co. 1, se¼ sec 235, blk 11, GH&SA Ry. sur, dr 1650 ft. Young Pet. Corp.'s Perry 1, nwc ne¼ sec 28, blk 178, T. C. Ry. sur, lcn; Bailey 1, nwc ne¼ sec 23, blk 178, T. C. Ry. sur, dr 455 ft.

RUNNELS COUNTY—Superior O&G Co. et al's Cook Heirs 1, swc 800-ac lse, M. P. King sur No. 436, sd repairs 1305 ft.

SCHLEICHER COUNTY—John M. Cooper et al's Bert Page 2, c ne se sec 40, blk L, GH&SA Ry. sur, lcn. Magnus Oil Corp.'s Judkins-Spencer (Pure) 1, c sw¼ sec 4, GC&SF Ry. sur, blk V-28, or Hooper-Wade sur, blk A, elev 2209 ft, top Ellenberger lime 5902 ft, pb fr sul w at 6527 ft to 5912 ft, used 2000 gals acid, shows little high gravity oil with water.

SCURRY COUNTY—C. W. Guthrie et al's T. E. Sorrels 1, sec sec 101, blk 97, H&TC Ry. sur, dr 1480 ft.

TAYLOR COUNTY—H. Crissman et al's City of Abilene 1, se¼ sec 66, B. A. L. sur, sd 3360 ft. Laurel Dunn & Herman McAlister's M. Bowles 1, sec sw¼ sec 28, B. A. L. sur, elev 1773 ft, sd 1225 ft. Trans-Continental Oil Co.'s Bowles 1, nwc 80-ac lse, sec 26, B. A. L. Lands, lcn.

TERRELL COUNTY—Ohio Oil Co.'s M. H. Goode 1, swc se¼ sec 26, blk 161, GC&SF Ry. sur, elev 2405 ft, tested 6,250,000 ft sweet gas in Pennsylvania lime 5606-12 ft in February, 1931, dr shaley-lime 6780 ft.

TERRY COUNTY—W. L. Pickens, T. Lomax & Maracaibo Oil Explo. Corp.'s J. B. Lewright 1, c ne ne sec 1, blk C-37, PSL sur, rig. Uscan Oil Co.-Illinois Oil Co.'s A. R. Brownfield 1, near c ne¼ sec 54, blk K, PSL sur, elev 3413 ft, flows salt w 4625 ft, sd for cas.

UPTON COUNTY—Moore Bros. et al's D. C. Giddings-Ohio 1, sub-div 25, league 4, Throckmorton County School Lands, sp and sd. R. H. Henderson et al's A. Reese Jr. 1, nwc e½ nw¼ sec 16, blk 3½, CCSDRGNG sur, set cas 300 ft.

WARD COUNTY—Prince Bros. et al's C. L. Monroe-California Co. 1, swc e¼ sec 52, blk 34, H&TC Ry. sur, dr by junk 2845 ft. A. W. Cherry, D. J. Finley et al's John Sealy Est. 1, nec ne¼ sec 54, blk F, G&MMB&A Ry. sur, mim.

WINKLER COUNTY—Emperor Oil Co.'s J. T. Cross 1, nec nw nw sec 4, blk B-10, PSL sur, sd and may abd, td 1210 ft. K. D. Oil Co.'s Pink Mitchell 1, nwc s½ ne¼ sec 23, blk B-10, PSL sur, elev 2814 ft, top anhydrite 1010 ft, top salt 1070 ft, top lime 2525 ft, set 7-in cas, td 2912 ft. Reed & Duffy's John Sealy 1, c ne nw sec 8, blk A, GMMB&A sur, elev 2896 ft, top anhydrite 1010 ft, top salt 1080 ft, top Yates sand 2715 ft, dr 3950 ft.

YOAKUM COUNTY—Texas Pacific Coal & Oil Co.'s Mrs. Ruth Bennett 1, c ne nw sec 678, blk D, John H. Gibson sur, top anhydrite 2393 ft, top salt 2514 ft, rust 2520 ft.

EAST TEXAS

BOWIE COUNTY — Woodley & Bentley's J. D. Lumpkin 1 (245-ac), John McDermott sur, 1¼ mi sw Dalby Springs, elev 290 ft, Annona chalk 1665-2090 ft, dr 3910 ft.

CHEROKEE COUNTY—A. F. Richardson et al's F. P. O'Brien 1 (167-ac), G. S. Clapp sur, 3 mi n by w of Rusk, lcn.

COLLIN COUNTY—California Consolidated Oil Corp.'s Mrs. W. L. Fagg 1 (38-ac), Jas. Rutherford sur No. 4, elev 626 ft, Georgetown lime 1980-2651 ft, top Paluxy series 2706 ft, cem 6⅝-in cas 2650 ft, td 2771 ft, preparing to test. Port Bolivar Co.'s O. C. Durning-Clarkston 1-A (140-ac), Wm. Creager sur Pat. 1193, elev 722 ft, dry on dst at 4050-4100 ft, sdo; A. Shirley 1 (50-ac), Gwynn Morrison sur, 1 mi e Anna, dk, temp abn.

DELTA COUNTY — W. S. McGee et al's

Mrs. P. W. Miller 1 (52-ac), E. Spencer sur, 1 mi sw Cooper, elev 465 ft, top Woodbine Red Beds 2650 ft, top Georgetown lime 3040 ft, sd 4123 ft.

FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Herold League, 5 mi sw Kosse, elev 521 ft, Austin chalk 2765-2946 ft, Georgetown lime 3544-3825 ft, top Edwards lime 3867 ft, top upper Glen Rose 4074 ft, sd 4114 ft, may dd to basal Trinity.

FREESTONE COUNTY—Fred R. Lovering et al's E. Bonner-Scott 1 (23-ac), H. Awalt sur, 7 mi n Fairfield, Pecan chalk 2175-2286 ft, sd 2850 ft. Red Lake Oil Corp.'s M. Wheeler 1 (160-ac), J. Y. Aguilera sur, 3 mi se Turlington, Pecan chalk 3088-3212 ft, Austin chalk 4120-4560 ft, top Woodbine series 4885 ft, td 4954 ft, perf cas and showed for big gasser. Roger Steward and Velvet Oil Co.'s E. H. Beauchamp 1 (100-ac), E. Greene sur, 4 mi nw Fairfield, dr 250 ft.

GRAYSON COUNTY—Olson Drl. Co.-Jas. H. Gardner & Broswood Oil Co.'s D. R. Utiger 1 (160-ac), P. P. Cady sur, 5 mi nw Denison, elev 722 ft, show o&g in Trinity 860-890 ft, base Trinity series 930 ft, top chert 950 ft, dr 1250 ft.

HENDERSON COUNTY — Cosden Oil Corp.'s Mrs. Zenia Miller 1 (1251-ac), Thomas Chaffin sur, cem sur cas. Wm. McDougal, Tr. et al's Elvira Price 1 (216-ac), M. Matthews sur, 3½ mi s Trinidad, elev 294 ft, Pecan chalk 2100-2390 ft, Austin chalk 3050-3484 ft, dr 3580 ft. S. Sparks, Keeley et al's Theo. H. Berry 1, Asron York sur No. 847, 5 mi s Brownsboro, sp and sd.

HOPKINS COUNTY—Empire O&R Co.'s J. E. Worsham 1 (149.36-ac), Alex O. Wetmore sur, lcn. Walter L. Goldston et al's H. J. Smith 2 (250-ac), Jas. A. Craft sur, elev 435 ft, Pecan chalk 1500-1610 ft, Austin chalk 2520-2585 ft, top Woodbine 3390 ft, top Georgetown lime 3630 ft, top Paluxy 4420 ft, td 4519 ft, flowing 40 bbls oil per hour, testing; Smith 3, lcn. D. S. Hager and W. P. Luse's J. G. Reynolds 1 (200-ac), A. O. Wetmore sur, lcn. Hager-Luse & Russ Pet. Co.'s J. E. Worsham 3 (149.36-ac), A. O. Wetmore sur, elev 433 ft, top Pecan chalk 1520 ft, dr 4210 ft; J. E. Worsham 4, elev 443 ft, dr 3980 ft.

HOUSTON COUNTY—E. R. Mount, Branch et al's Dr. P. S. Griffiths 1 (136-ac), Frank Johnson sur, 3 mi sw Crockett, sp and sd.

HUNT COUNTY—Penn Oil Corp.-Elmer S. and Fox Wood's A. B. Manning 1 (57½-ac), Sally Owens sur, 5 mi ne Lone Oak sur, elev 599 ft, dk.

LAMAR COUNTY—J. A. Forester et al's J. S. Woodward 1 (18¾-ac), J. W. Woodward sur, 1½ mi e by s of Minter, elev 402 ft, top Georgetown 2256 ft, Paluxy sand 3060-3144 ft, top anhydrite 3735 ft, base hard anhydrite 4075 ft, broken to 4105 ft, td 5129 ft, fsh parted cas at 2700 ft. H. Salmon, Lowery & Cutler's E. C. Porter 1 (30-ac), Thos. King sur, 3 mi ne Chicota, lcn.

LEON COUNTY—Roth & Faurot O&G Co.'s J. L. Shaw 1 (254-ac), O. R. Reams sur, 5 mi n Centerville, rig. H. M. Ogg et al's O. Wiley 1, E. Devinney sur, 1 mi w Buffalo, dk.

NAVARRO COUNTY—Calto Oil Co.'s Etta Black 1 (160-ac), B. G. Balthrope sur, 1 mi sw Bazette, mim and sd. Philip S. Groginski et al's S. P. Love 1 (128-ac), Richard Goad sur A-33, 3½ mi sw Corsicana, elev 422 ft, Austin chalk 1153-1525 ft, top Woodbine 1918 ft, Georgetown lime series 2270-2463 ft, top upper Glen Rose 3160 ft, stringer anhydrite 3875-3937 ft, sd in lower Glen Rose 4223 ft.

RAINS COUNTY—Humble O&R Co.'s O. L. J. Easter 1 (39¾-ac), R. Hotchkiss sur, 4½ mi e Emory, 7600-ft Trinity test, sp.

RED RIVER COUNTY—J. S. Abercrombie Co.-Harrison Oil Co.'s Southern Pine Lumber Co. 3 (392.37-ac), D. D. Bruton sur, 10 mi ne Clarksville, dr 1250 ft. Roy I. Carter Drl. Co. et al's J. A. Tutt 1 (40-ac), Dennis Harty sur, lcn. Carpenter Oil Corp.'s R. E. Anderson 1 (100-ac), S. W. Sims sur, 3 mi n Clarksville, dr 175 ft. T. J. Farrington et al's W. T. Morris 1 (351-ac), Joseph Guest sur, 1 mi s Detroit, elev 478 ft, sd 1200 ft. M. Petroff et al's R. C. Morris 1 (176-ac), Joseph Guest sur, 2 mi w Detroit, sp and sd. Dale Sneed, R. H. Manning and Texfornia Co.'s Hooker-Hughes 1 (80-ac), MEP&P Ry. sur No. 642, 6 mi sw Lydia, elev 307 ft, Pecan chalk 995-1302 ft, top Austin chalk 2018 ft, sd 2720 ft.

ROBERTSON COUNTY—J. Edward Mills et al's Tony Congelosi 1 (75-ac), Geo. A. Nixon sur, 3½ mi sw Hearne, dr 2265 ft.

RUSK COUNTY—John W. Merritt et al's J. A. Stallings 1 (47-ac), Thos. Uzzell sur, 2½ mi s Eastex field, ¼ mi sw Pleasant Grove, elev 359 ft, Pecan Chalk 2680-3015 ft, dr 3315 ft.

SMITH COUNTY—W. L. Cloud et al's Dora Kendall 1-A, John Williams sur, 1¼ mi se Jamestown, sd 2532 ft.

UPSHUR COUNTY—B. L. Watson et al's W. O. Irwin 1, D. R. Cannon sur, 3 mi ne Coffeyville, lcn. J. K. Wadley et al's R. C. Barnwell 1 (150-ac), J. T. Lloyd sur, 5 mi sw Coffeyville, elev 383 ft, Pecan chalk top 2560 ft, Austin chalk 3708-3811 ft, top Woodbine series 4038 ft, tested sw, top Georgetown 4100-4114 ft, dry and abd.

WOOD COUNTY—G. W. Nix et al's Mrs. E. A. Russell 1, John Delap sur, 4 mi w Golden, sd 600 ft.

EAST TEXAS BORDER COUNTIES

HARRISON COUNTY — Hanover, Bergendoll et al's Buchanan 1, Wm. McIlvain sur, sd 4222 ft. H. H. Roberts et al's Zion Douglas 1, S. Field sur, dk and mir. Weiss et al's W. L. Rudd 1, Wm. Steele sur, lcn.

MARION COUNTY—Tom Bell et al's Carrie Moseley 1, David Lane sur, 12½-in csg 72 ft, sd 500 ft. M. H. Overlees et al's Lizzie Henderson 1, R. Bennington sur, mim.

PANOLA COUNTY—A. C. Glassell's Frost Lbr. Co. 1, Mary S. Potts sur, elev 216 ft, completed, 2½ mi ft gas and 48 bbls 52.2 gravity while distillate daily, td 6002 ft. Williamson 1, H. Coleman sur, lcn (469 ft of Frost Lbr. Co. 1). Danciger O&R Co.'s J. W. Tatum 1, Alfred Bissell sur, sd 21 ft. Lawler Pet. Co.'s C. T. Becknell 1, Bailey Anderson sur, spd. White Goodwin Synd.'s Hill 1, Winny Mann sur, rur. Logansport P. L. Co.'s Rushing 1, Mannan Smith sur, 7-in csg 2477 ft, testing td 2734 ft. Magnolia Pet. Co.'s E. A. Hull 1, Thos. Applewhite sur, elev 232 ft, top Georgetown 2395 ft, dr 3875 ft. Motex Oil Co.'s J. M. Furrh 1, Thos. M. Alstone sur, rur. Yandell Rogers' Cameron Lbr. Co. 1, Wm. A. Lagrone sur, lcn.

SHELBY COUNTY—Rubeling & Potter's O. H. Polley 1, Wm. Whisner sur, arr deepen to 6000 ft, td 4200 ft. Archie Carpenter's Green 1, J. English sur, arr deepen to 3387 ft, chalk. Red Wing Oil Co.'s C. H. Herton 1, J. Dowling sur, fsg 1888 ft. H. A. Stebbinger's Pickering Lbr. Co. 1, C. E. Henry sur, si, td 5029 ft, oolitic lime. Pure Oil Co.'s J. L. Smitherman 1, S. O. Pennington sur, lcn.

SOUTH TEXAS

ATASCOSA COUNTY—Frontier Oil Co.'s Oppenheimer 1, 193.4-ac tr, J. Sharp sur No. 518, 6 mi s Lytle, ru. Helvetia Oil Co.'s Pratt 2, 176-ac tr, F. de la Garza sur, Anchorage prospect, ½ mi se Pratt, dr 1465 ft. McNeill Pet. Co.'s Ada Tom et al 1, 640-ac tr, W. E. Tom sur, 5 mi ne Whitsett, coring 980 ft. L. G. Priest Tr.'s, Sanders 1, 117.61-ac tr, J. P. Garman sur No. 1189, lcn. Rogers & Rogers' B. McLain 1, 84.8-ac tr, V. Trevino sur 79, 1 mile s Somerset field, td 1998 ft, sdy sh, sd 1620-92 ft, 7-in csg 1620 ft, bailing.

BASTROP COUNTY—Joe E. Mills' Eskew 1, Samuel Wolfenberger sur 18, Hilbig area, dr 2130 ft. Lee F. Ross et al's Caldwell 1, 1500-ac tr, J. A. Navarro sur, 10 mi w Bastrop, dr 750 ft. Paul C. Teas' Vinklarek 1, 100-ac tr, A. Millet league, 10 mi s Smith Villa, dr 6455 ft.

BEE COUNTY—Black Dev. Co.'s Asa Jones 1, 286-ac tr, M. Wood sur, ab 41, 5 mi w Beeville, dr 4465 ft. Devonian Oil Co.'s Manning 1, J. Poitevant sur 1, 5 mi w and slightly s Mineral, abn 3862 ft; Manning 2, 2310 ft swl, 1650 ft nwl of J. Poitevent sur 1, 1600 ft nw No. 1, prep to mim. Humble's McKinney 9, L. C. Randolph sur, 1¾ mi se Pettus, coring 3810 ft. Miller-Donzis Oil Corp.'s Holzmark 1-B, Foley, 135-ac tr, S. May sur, 1200 ft nw No. 1 Holzmark, Foley area, dk.

BEXAR COUNTY—Algra Oil Co.'s Peters 1, Miguel Gotari sur 5, sec 4, 13 mi se San Antonio, sd 670 ft for pipe. American Gas Co.'s Oliver 5, 400-ac tr, M. F. Rodriguez sur, Gas Ridge, sd 3271 ft. Albert Chmel's McIntosh 1, 275-ac tr, J. W. Garrity sur No. 19, ¾ mi sw Kirby, dk. F. H. Eckert & Son's Meyer 1, 100-ac tr, Morales sur, 9 mi e San Antonio, dr 1050 ft. Mayers and Smity's Bass et ux 1-A, 73.5-ac tr in F. A. Ruiz sur 47, 40 ft n No. 1, 2 mi se VonOrmy, td 875 ft, ur 8-in cas at 860 ft. Raymond Pulliam's Lamm 2, 914-ac tr, E. Frobese sur, lcn. Woodward & Hardie's R. W. Devilbiss 1, John Devilbiss sur, 1 mi s Thelma, sd 2284 ft. Woodward, Hardie & Herrold's Herman Sons 1, 6072 ft s Rockport rd, 218 ft fr Applewhite rd, 2019-ac tr Henry Pace League sur 37, tr 9, Swearingen, Cassin and Tayloe subd, 28 mi s San Antonio, set 10-in csg 40 ft, sd to lay water line.

BROOKS COUNTY — The California Co.'s O. & G. Co. 1, in Alta Mesa area, B. Garcia tr 5, La Mestina de Gonzlina gr, dr 2050 ft. Douglas & Burden Inc.'s Faller 1, 330 ft s & wl of C. M. Laughlin sur No. 434 Alta Verde, 1½ mi se prod, set 8-in sur csg at 85 ft. Magnolia's Ed Lasater 1, S. Korkill sur No. 440, 9 mi w Falfurrias, coring 4195 ft.

BURLESON COUNTY—M. R. Exploration Co. Inc.'s Fountain 2, in W. Raleight sur, blk A-47, 12 mi ne Caldwell, dr 6053 ft. Red Bank

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Oil Co.'s Nellie Gramm 1, Eliza Santef sur, 2500 ft nw No. 1 Gramm, 7 mi w Creisman, stuck ds, 5928 ft.

CALDWELL COUNTY—J. G. McKenzie's Pierce 1, S. Seal league, s of Luling, sd 160 ft. Brown Drilling Co.'s Pope 2, Salt Flats area, 150 ft sl, 2300 ft el, Plum Creek 134-ac tr, John D. Rains sur, 8 mi se Lockhart, 500 ft e Pope 1, lcn.

CALHOUN COUNTY——Continental's Austin 1, sec 12, blk "H," Pedro Garcia sur, 1 mi n of other heaving shale wells, Seadrift prospect, sec 11, td 8825 ft, pb, sdtr and dr to 8750 ft, pulling 6⅝-in csg, likely will be abnd.

DUVAL COUNTY—Benedum & Trees' Sevir 1, 6039-ac tr, Palo Blanquita gr, 2 mi ne Realitos, dr 5125 ft. Mills Bennett's Yates 3, sec 317, 4 mi se Labbe field, dr 2745 ft. Bridwell Oil Co. et al's Robles Estate 1, sur 68, ½ mi e of n end Hoffman field, td 2825 ft sand 2810-21 ft, completing. Frank Buttram's (H. H. Coffield et al), N. L. & L. Co. 1, sur 102, 5 mi nw Eagle Hill, near McMullen County line, deepening from 1925 ft. Gilcrease Oil Co. and Tom Graham's Escobar 1, blk 4, sec 2, 829.5-ac tr, Juan Jose Manuel de la Garza Falcon gr, Buffalo Tex. subd, (2 mi sw Premont area) ru. F. A. Gillespie and Sons' Perez et al 1, 330 ft wl, 971.6 ft sl of 160-ac tr. San Diego de Ariba gr, 3 mi w of San Diego, dr 1200 ft. W. L. Goldstone et al's Welder heirs 1, 330 ft sl, 330 ft wl sec sur 217, 2 mi e of n end of Loma Novia field, prep mim. Hooper-Rutherford Inc.'s DCRC 1, Coleman area, 40-ac lse in sec 53, 10 mi sw Freer, abd 2505 ft. Lipscomb & Daubert's Peters 1, sur 321, 2¼ mi e Lopez field, dr 2470 ft. McCandless & Cloves' Sutherland 1, 330 ft sl, 4818 ft el of sec 126, 8000 ft e Sarnosa field, lcn. Albert Plummer et al's Danmier 1, 990 ft sl, 330 ft wl ne¼ sec 58, in Copeta Garden Tracts, addn No. 4, 9 mi s Realitos, dk. Rio Bravo Dr. Co.'s Peteres 1-C, sur 398, 1¼ mi nw Rancho Solo field, coring 1820 ft. Rogers & Rogers' Rogers 1, 3,199.5 ft swl, 250 ft nwl of sh 2, El Mesquite gr, 2000 ft sw disc El Mesquite area, sp.

EDWARDS COUNTY—Plateau O&G Co.'s Hatch 1, J. W. May sur, sec 66, HE&WT RR sur, dr 2335 ft.

FRIO COUNTY—Amerada's Halff & Oppenheimer 7, 330 ft swl, 1320 ft nwl of sur, B. J. Gilman sur, (591-ac) and ne offset Amerada's Davies & Burke 1, dr sh 4878 ft. Thornton Davis et al's Halff & Oppenheimer 1, John C. Calre sur 336, 1 mi e Pearsall chalk production, shot with 350 qts at 5388-5618, flowed 130 bbls day.

GOLIAD COUNTY—Felmont Corp.'s Hoff 1, 1223 ft sl, 330 ft el 75-ac tr, BS&F sur No. 7, e offset to disc well, lcn. Sun's Fromme 1, L. A. Maetze sur, 10 mi n Goliad, dr 3175 ft.

GONZALES COUNTY—M. S. Holliday et al's Edwards 1, W. W. Pace 1/3 league, blk "A," Holliday subd, 3 mi sw of Cheapsides, coring 405 ft. H. H. Weinert's (Marts & Beavans) Martindale 1, 5280 ft swl, 500 ft nwl of J. Robinson sur, near Ottine, ru.

GUADALUPE COUNTY—R. B. Byrd et al's Grimm 1, 150 ft nl and wl of 100-ac tr, Green DeWitt sur, lcn. W. C. Campbell et al's Lay 1, on 20-ac lse, J. K. Davis sur, 800 ft e South Darst Creek, ru to pump 2470 ft. Crouch et al's King 1, ¼ mi se Zoboroski area, 80-ac lse, K. D. Clements sur, dk & sd. Chas. Culver et al's Vorphal 1, Geo. W. Edwards sur 56, 4 mi se New Berlin, td 2525 ft, top Edwards 2516 ft, prep to set 7-in csg 1910 ft to test 1910-34 ft. Detroit Texas Dev. Co.'s Carter 1, 300-ac tr, 1 mi sw San Marcos river, dr 1925 ft. W. J. Dobbs et al's Jahns 1, 100-ac lse. J. K. Davis sur, ½ mi ne S. Darst Creek prod, sp. Jim Harper et al's Koepp 1, New Berlin area, 95.35-ac tr, Vicente sur 7, 75 ft sw Dixie Oil Co.'s abd test, sp & sd at 20 ft. F. P. Hynes et al's Linne 1, 224-ac tr, A. Reese sur, 12 mi se Seguin, td 1704 ft, acidized with 2000 gals, recement 7-in csg 1534 ft. Long & Ross' Feliz 1, 1½ mi s fr New Berlin, 75-ac tr V. Duran sur, redr 570 ft. Riddel Oil Co.'s Nolte et al 1, J. Sowell sur, 6 mi e Seguin, td 1880 ft, 6⅝-in csg 1780 ft, acidized.

HAYS COUNTY—R. D. Kelly's Donalson et al 1, 105-ac tr, J. Vermandi gr, 1¼ mi ne San Marcos, dr 750 ft.

HIDALGO COUNTY—Earl C. Hankamer et al's Rabb 1, 330 ft el, 490 ft sl of 511-ac tr, Laguna seca League, 5 mi sw town of Linn, 12 mi nw Edinberg, abnd 4-29-36, ru to dd. McCullum Exploration Co.'s Engleman, Jr., 1-B, lot 8, sec 259, Tex-Mex Ry. sur, 1½ mi se Pantana gasser, ru; McDougal 1, lot 223, blk 1, LaBlanca tr, 1½ mi s Pantana gasser, ru. H. J. Porter et al's Sweeny Est. 1, lot 1, Waynes Wood subd No. 1, 6 mi sw Donna, fsh 5110 ft. Union Sulphur's ARGL&L Co. 10, blk 50, tr 2418, N. Capisallo dist, Mercedes area, td 8306 ft, cutting out ds.

JIM HOGG COUNTY—Pan-Ultimo Oil Co.'s (Theo Hicks et al) Kohler 1, blk 9, Noriacitasmgr, 3 mi nw Bebbonville, sd 2875 ft. Locke Purnell & Gifford Oil Co.'s C. O. Gallagher 1-B, 40-ac tr, Randado gr, blk 190, Pippin subd, 4½ mi se Randado, dr 2725 ft. Holbein 1, center blk 58, sec 3, Las Animas gr, nw portion of county, abn 3516 ft.

JIM WELLS COUNTY — Tom Graham's Luby Est. 1, sh 4, Los Presnos de Abajo gr, 1 mi w Bentonville townsite, td 5510 ft, pb & perf 4026-31 ft, comp gasser, 1700 lbs pressure.

KARNES COUNTY—R. L. Barnett's Lee 2, Alex Hunter sur, 4½ mi ne Karnes City, 330 ft se No. 1, dr 1420 ft. DeGraffe & Reele's [illegible] ran 1, 460 ft el, 160 ft sl of the McConnell League (10 ft fr abd well) in the se corner of McConnell League, 5 mi ne Riddleville, sp. H. H. Weinert, Inc.'s Porter 1, 45 degrees from Hewitt's Peters 1, ru.

KLEBERG COUNTY—Clark et al's Kivlin [illegible] blk 8, sec 39, KT&I subd, td 2332 ft, snd 2320-32 ft, testing.

LAVACA COUNTY—Universal O&G Co. & Glaspie's Schubel 2, 100-ac tr, C. Fitzgerald sur, 1100 ft ne No. 1, 2 mi nw Yoakum, sd 2050 ft. Wilshire Union Oil Co.'s Pohl 1, 330 ft northly sl, 330 ft el of 120-ac tr, M. Wooten sur, 7 mi ne of Ezzell, sp.

LaSALLE COUNTY—Kennedy & Johnston's Gilmer & Wildenthal 1, 330 ft nel & nwl of 140-ac tr in sur No. 283, or 5175 ft swl, 1450 sel of Santenis Carrasco sur 28, 11 mi sw Los Angeles, 8 mi se Cotulla, dk. W. H. Vernor's Jeffries 1, 150 ft nl, center e & w lines of sec 726, HE&WT RR sur, 10 mi se Artesia, dr 775 ft.

LIVE OAK COUNTY—J. H. Durbin's Marbach 4, 429-ac tr, Stephen Hays sur, 2½ mi sw Whitsett, td 917 ft, re-cemented, woc. R. H. Feltner et al's Sanger Ranch 1, w½ of GC&SF sur 391, sw part of county, coring 3525 ft, top Pettus 3433 ft. Maryland Oil Corp.'s Geo. West Est. 1, lot 299, Fernandez & Vaughn surveys, 5 mi sw Geo. West townsite, abn 4265 ft. Posey et al's Turner 1, S. Hays sur, sw of Whitsett, dr 365 ft. Sun's James 1, 1258.3-ac, Patrick McGloin sur, ab 28, 1½ mi w Mikeska, sp.

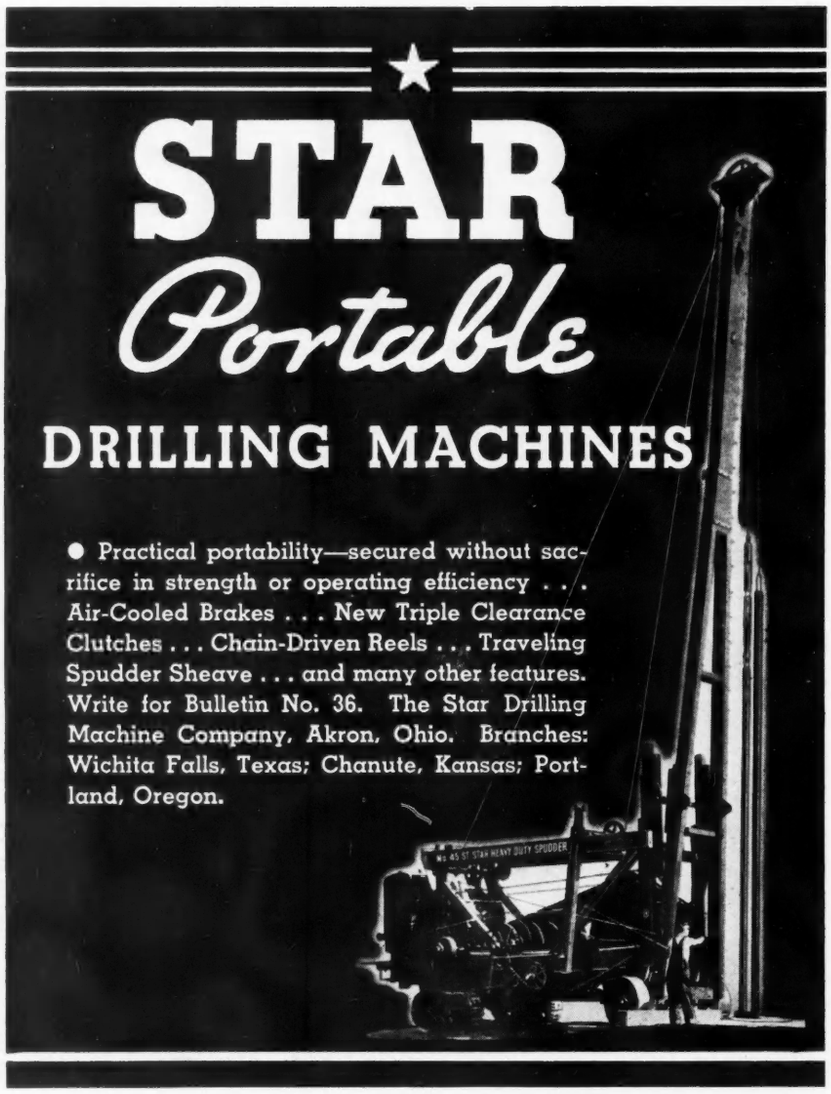
MAVERICK COUNTY — J. W. Boicoutr's Edson & Estrada 1, James Eaves sur 68, dr 580 ft. Rio Dev. Co.'s Winchester Kelso 1, 297-ac tr in sur 2, 3 mi n Eagle Pass, sd 1000 ft.

McMULLEN COUNTY—C. B. Grimes, Tr.'s Pursch 1, 160-ac lse, sur 16, 1 mi n Seven Sisters, abn 2646 ft. Humble's Edrington 1, 330 ft s & wl, sec 57, AB&M sur, 6 mi ne Seven Sisters, lcn. Fred Nute et al's Fahler 1, 100-ac farm, Geo. Pittuck sur, 4½ mi w Calliham, dr 710 ft. L. D. Ormsby's Griffith 10, 185 ft sw No. 9, B. Sparks sur, ab 794, 1560 ft nl and 940 ft wl, td 940 ft, set 5 3/16-in 930 ft, snd 930-40 ft, dst showed 80 ft oil and mud 10 min. Joe Pickett's Fisher 1, M. Hely sur, 1 mi s Calliham, td 1024, snd 1010-24, comp small gasser. Reynolds & Richardson's Shiner Estate 1, 330 ft el, 375 ft sl of w½ sec 83, Shumway subd, sur 23, 16 mi s Calliham, abn 3154 ft.

MEDINA COUNTY—Josie Oil Co.'s Medina Irrigation Farms 1, lot 1, blk 32, sec 7, Medina Irrigated farms sub, 1½ mi e of Devine, sp. R. P. Whitfield's Odem 1, 700 ft nl, 155 ft wl lse, Henry Castro sur No. 177, ne Taylor field, mim. C. Whitting et al's Hondo Nat'l Farm Loan 2, sec 214, Geo. Studer sur, ½ mi ne No. 1, 4 mi se Hondo, ru. Will A. Wycoff's Bendele 1, 321.5-ac tr, J. Barnhart sur 593, ab 1733, 8 mi s D'hanis, dr 240 ft.

MILAM COUNTY—W. R. Ritchey's McDermott 1, 167 ft nwl, 1993 ft nel farm in Cockrill sur, 11,100 ft nel, (Little River), 972.22 ft s 31 of sur, 6 mi e Cameron, sd 50 ft.

NUECES COUNTY—Barnsdall's Weil 1, lot 5, sec 7, McBride partition between Saxet and Corpus Christi fields, coring 7163 ft. Fearis & Cosner's Stockton 1, ne¼ sec 25, Laureles Farm tracts, Ramon de Ynojosa sur, 12 mi sw Corpus Christi, sey 450 ft 10¾-in csg, woc. W. L. Hinds' Sevier 1-A, sec 60, Paul subd, Driscoll Ranch, 65 ft se No. 1, 2 mi w Clara Driscoll field, coring below 5100 ft. O. W. Killam's Sevier 1, 40-ac tr, sec 112, J. A. Cabosos sur, Bishop subd, Driscoll Ranch, 2 mi s Driscoll townsite, abn 5013 ft. G. M. Richardson et al's R. S. Carter 1, center of nw se sec 8, Laureles Farms tr, 8 mi s CC&W mi se London sp & set sur csg. Seaboard Oil Corp. and I. J. Allen's Chapman et al's 1, sec 80, Laurels Farm tr, Rincon de Corpus Christi gr, 17 mi sw Corpus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Christi, dr 150 ft. Texon Dr. Co.'s Sevier 1, 880-ac tr, W. W. Chapman lands, Palo Alta gr, n offset Texon Austin, dst 5735-61 ft, develop 200 lbs and little gasoline. WAR Oil Co.'s C. J. Hoelscher 1, blk 22, J. C. Russell Farm lots, 1850 ft se Saxet prod, td 4621 ft, set csg on btm.

REAL COUNTY—Tide Water's Landgrof 1, 220-ac tr, J. Collyer sur, n of Haynes Bay, dr 2250 ft.

SAN PATRICIO COUNTY—Callaway-Crosby & Porter's White Point Dev. Co. 1, 438-ac tr, Seguin sur 4 & 5, ab 247, White Point, td 6510 ft, sdtr & re-core snd 4900-11 ft, set 5½-in liner 4898 ft, swabbing. Eleanor Oil Co.'s Kline 1, lot 5, blk "C," Coleman-Fulton Pasture Co. subd, 2½ mi se Gregory, td 6681 ft, cement, perf csg 6245-52 ft; Toland 1, revised location, 8000 ft n Kline 1, lot 14, blk A, Coleman-Fulton Pasture subd, 2½ mi e Gregory, dk & sd. Hooper & Rutherford Inc.'s Willis 1, Gregory area, T. T. Williamson sur, e offset to Eleanor's Kline 1, ru.

STARR COUNTY—Howard Bass' Hayden et al 1, s½ blk 4, sur 47, porc 80, 5½ mi ne Rio Grande City, dr 1345 ft. J. H. Browers' Saenz 1, sur 363, sd 150 ft. Barbara Oil Co.'s Pardue 1, 1168-ac tr, E. Javali Camargo, 4500 ft nw Rio Grande field, dr 1325 ft. D & D Oil Co.'s (F. Davenport) Kelsey-Bass 1, Davenport subd of n 585 ac of porc 86 & 87, Camargo Juris, 2 mi w Barbacoas field, sd 6015 ft, contract depth. F. Davenport & Slick Urschel's Slick Est. 1, sec 485, 20 mi ne Rio Grande City, td 4812 ft, move in to dd. South Coast Oil Corp.'s Lopez 1, lot 11, sh 29-B, porc 80, 10 mi n Rio Grande City, dr 1935 ft.

TRAVIS COUNTY—W. B. Bottinfield et al's Wells Est. 1, J. Harper & J. B. Kourk sur, sd 905 ft.

VICTORIA COUNTY—Magnolia's Beck 1, 132.8-ac tr, T.N.O. sur 1, 4½ mi nw Telferner, dr 500 ft. Plymouth Oil Co.'s Welder 1, 6371.9-ac tr, S. Belding sur, ab 141, 7 mi e Nursery, ds stuck 6590 ft, working to recover; R. H. Welder 1, 6371.9-ac lse, F.H.&M.G. R.R. sur 1r, 9 mi n Nursery, near Dewitt County line, dr 4735 ft. Portilla Drilling Co.'s Welder 6, 1600 ft n 31° No. 1, 466 ft e of RR or 1100 ft n, 65° e No. 2, Felipe Dimmitt sur (1470 ft fr sel and 1100 ft ne No. 2, 534.96-ac tr, sp.

WEBB COUNTY—French Oil Corp.'s Garcia 1, sur 1121, lcn. Ivan Howard et al's Frost Nat'l Bank, n½ sur 733, td 2051 ft, tested sw, abn; Frost Nat'l Bank 2, sur 595, 5 mi w Mirando City, dr 1065 ft. Lundell Producing Corp.'s Lopez 1, 330 ft out nwc 200 acres, sec 731, 1 mi se Lopez field, ru. Lu-Tex Oil Co.'s Lone Star Const. 1-A, ru & sd. Mid-Continent & Oklahoma Co. of Tex. Inc's Laubscher 1, sec 1394, comp fsh job 2886 ft. H. E. Nessley's Bruni 2, sur 449, 3 mi s Killiam extension to Cole field, 8 mi sw Bruni, abn 3510 ft; Bruni 1, sec 449, 8 mi sw of Bruni, ru. Wilcox O&G Corp.'s Puig Bros. 1, sec 9, Loma Blanca Pasture of Joaquin Galan gr, sur 2182 & 2183, prep to spud.

WILLIAMSON COUNTY—L. D. House et al's Stewart 1, 450 ft wl, 700 ft nl, 151-ac tr in M. de la Villa sur, 11 mi e Bartlett, mi spudder. C. R. Richardson's Zeizchang 1, 100-ac tr, Hamilton White sur, lcn.

ZAPATA COUNTY—B. M. Alexander, Jr.'s Fee 1, 250-ac lse, 5 mi n Lopez, lcn. W. C. Bob's Martinez 1, blk 22, W. R. Duke subd, Randado gr, 1 mi w Charco Randado field, sp & sd. Gilcrease Oil Co.'s Trevino et al 1, blk 5, Mode subd, porc 2 & 3, 17 mi w Comitas field, milling 2316 ft. C. I. Jennings' Martinez 1, 400-ac tr, sur 434, snd 168-75 ft, completing.

TEXAS GULF COAST

AUSTIN COUNTY—W. H. Mitchell's Fenner 1, J. Fitzgerald sur, sd 3417 ft.

BRAZORIA COUNTY—Beaty, Bowles & Borsodie's Truska 1, Algoa prospect, H. & T. B. sur No. 6, dr lime 5764 ft. Gulf's Wilkes & Smith 2, Lockridge prospect, J. W. Hall sur, woc 6366 ft.

BURLESON COUNTY—Red Bank Oil Co.'s Grann 1, Chriesman area, E. Santo sur, fsh 5930 ft.

CHAMBERS COUNTY — Humble's Middleton C-1, e of Anahuac, H. & T. sur No. 82, abn 7450 ft. Glenn H. McCarthy's Kirby Pet. Co. 1, n of Cotton Lake, Chambers County School Land sur, dr shale 2286 ft. Sun's Acom 1, Seabreeze prospect, T. & N. O. sur, sec 128, running 9⅝-in csg to 8110 ft; White Estate 2, Seabreeze prospect, T. & N. O. sur, sec 128, waiting on csg at 8869 ft.

COLORADO COUNTY—Sterling's South 1, Garwood prospect, I. & G. N. sur No. 41, to perforate at 6127 ft.

FORT BEND COUNTY—Sloan & Zook's Brown 1, Pilant Lake prospect, Barrett & Harris sur, dr shale 1150 ft.

HARDIN COUNTY—Republic-Houston Oil Co.'s Brooks Fee 2, relief well, J. W. Brooks sur, cutting and pulling at 7071 ft; same operators Brooks 3, Silsbee area, J. W. Brooks sur, dk.

HARRIS COUNTY—D. B. Cherry et al's Dodger 1, Epsom Downs area, J. T. Harrell sur, sd 1646 ft. Geo. Lawrence et al's Zappe 1, Bammel area, J. Farwell sur, ru. Stanolind's Candelari 1, Clinton area, Reels & Trobough sur, making gas and distillate 8101 ft.

JEFFERSON COUNTY—Sun's Broussard 2, Labelle area, W. B. Burton sur, dr shale 3124 ft.

MATAGORDA COUNTY — Hammond Exploration Co.'s Croker 1, South Bay City area, E. Hall sur, dr lime 5708 ft. Strake Pet. Corp.'s Sargent 1, Poole Ranch area, L. E. Parker sur, dr shale 2846 ft. Sun's Craig 2, Hawkinsville area, J. Williams sur, dr salt 1296 ft. Tiettes & Harris' Pierce Estate 1, Blessings prospect, J. W. E. Wallace ur, dr hard sand 7648 ft.

TYLER COUNTY — Republic-Houston Oil Co.'s Hurd Fee 1, se of Spurger field, Norman Hurd sur, woc 1708 ft.

WALKER COUNTY—Page & Hartman's Carey Land and Dev. Co. 1, e of Dodge, D. McDonald sur, ru. Roswell Oil Co.'s Osborne 1, Bath Community, J. Jordan sur, sd 267 ft.

WASHINGTON COUNTY—Sun's Lauter 1, Clay Creek field, W. Clay sur, preparing to swab at 7462 ft.

WHARTON COUNTY—Barnett Pet. Corp.'s Bard 1, El Campo prospect, J. M. Marford sur, dr shale 5450 ft. Texas Crusaders Oil Co.'s Fee 1, Magnet area, Smith & McKenzie sur, making oil and salt water 5560 ft. P. B. Watson's Sweet 1, Magnet area, Smith & McKenzie sur, sd 5488 ft. Felmont's General Mitchell 1, Spanish Camp prospect, D. Wade sur, dr shale 7590 ft. Shell's Seydler 1, Southeast Wharton prospect, F. Riggam sur, dr lime 3457 ft.

UTAH

EMERY COUNTY—California Co.'s Unit 1, sw 22-23s-11e, trying to regain circulation at 2285 ft.

GRAND COUNTY—Utah-Southern Oil Co's Hyde-Government 1, s sw nw 32-22s-2e, dr 5596 ft.

WYOMING

ALBANY COUNTY—California Co.'s Bath 1 ne sw 1-16n-76w, dr 550 ft.

CARBON COUNTY — General Petroleum Corp.'s Union Pacific 1, sw sw sw 5-19n-83w, coring at 4898 ft. Whitford 1, sw se se 24-20n-84w, pb 3500 ft and perforated, rated at 20 bbls daily in General Petroleum series.

GOSHEN COUNTY—Ohio Oil Co.'s Joseph A. Waggoner 1, cne ne 14-28n-63w, dr 1675 ft.

LARAMIE COUNTY — Amerada Petroleum Corp.'s Morton 1, csw sw 13-13n-68w, dr 7181 ft.

NIOBRARA COUNTY — Adams-Louisiana Co.'s A. L. Spaugh 1, cnw ne 18-35n-65w, dr 3988 ft. H. V. Elwell and the Adams-Louisiana Co.'s San Joss 1, cs se nw 1-34n-68w, dr 390 ft.

PARK COUNTY—General Petroleum Corp.'s Government 1, nw nw nw 33-47n-100w, dr 2300 ft.

Packing

The Garlock Packing Company, Palmyra, New York, recently issued an interesting booklet describing its "Klozure" oil seal. It wil be mailed to interested persons upon request.

Roofing Problems

The problem of how to reduce maintenance expense on industrial roofs is discussed simply and with numerous easily understood illustrations in a new 28-page booklet entitled "Things You Should Know About Your Roof" published by Johns-Manville.

How roof troubles start, and how best to prevent them are subjects of discussion, and graphic information is given on how roofing felts should be laid, how flashing should be applied, how the joints in the coping should be protected, and how roofing should be placed around drains, skylights and angle supports.

The book describes the engineering data on roofs, which is supplied to Johns-Manville Approved Roofing Contractors.

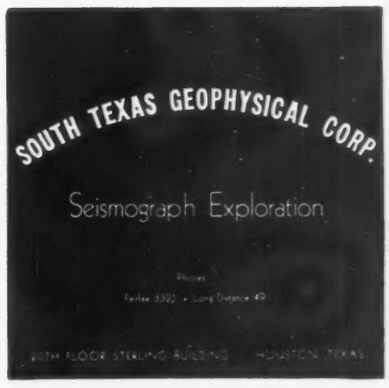
Arc Welding Handbook

The Lincoln Electric Company, Cleveland, Ohio, has announced reissue of the "Procedure Handbook of Arc Welding Design and Practice" in greatly enlarged form. The handbook is reissued at this time to include all new data essential for most efficient use of arc welding in all its varied applications.

New data presepted in the handbook includes complete information on the following subjects: Characteristics of the Welding Generator; Selection of Type of Joint; Insurance of Fusion Welded Vessels; Welding Codes; Arc Cutting; Polarity of Welding Current; Horizontal Welds; Sheet Metal Welding; Effect of Electrode Size on Welding Cost; Methods of Testing Weld Metals; 4-6 Chrome Steel; Monel Metal; Principles of Surfacing by Welding; Welded Design Begins with Standard Shapes and Plates; Plate Girders.

Welding

The Lincoln Electric Company, Cleveland, Ohio, has ready for free distribution an interesting booklet on "The New Arc Welding Technique."



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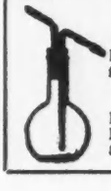

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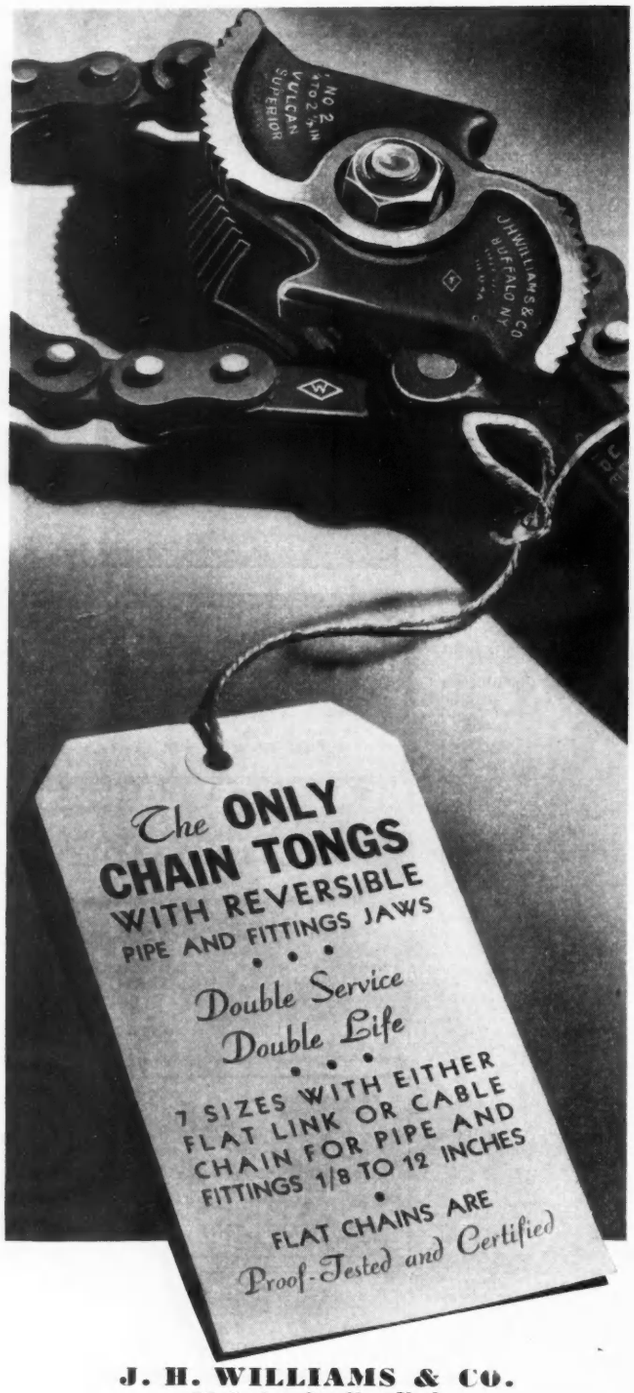

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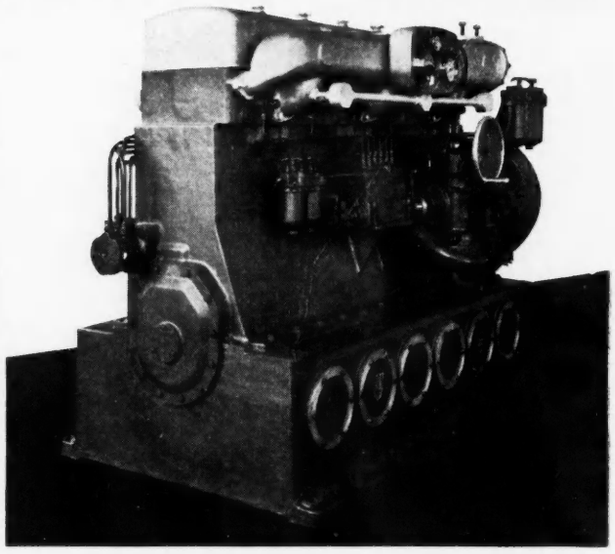

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Machinery • Tools • Catalogs • Books

DIESEL ENGINE

The Cooper-Bessemer Corporation

The Cooper-Bessemer Corporation, Mt. Vernon, Ohio, has just issued a bulletin on the Type-EN Diesel, one of the well known "N-Line" engines. A copy of the bulletin may be obtained by writing any of the Cooper-Bessemer offices.

TRACTOR

The Cleveland Tractor Company

The Cleveland Tractor Company, Cleveland, Ohio, has announced a new streamline design of the "Cletrac Crawler Tractors."

"A symphony in steel" is an expression that has been used by the company in describing the new streamlined models. Comfort for the operator is provided in coil-spring-cushioned seat, adjustable foot rests and controls that make operation as easy as driving a team. Exhaust and intake are hiddene from view.

Details of the tractors are given in a new booklet now on the press. The Cletrac line includes crawler tractors from 22 to 94 drawbar horsepower, powered with internal combustion and Diesel engines.

DEMOUNTABLE RIM

Dodge Manufacturing Corporation

Dodge Manufacturing Corporation, Mishawaka, Indiana, has announced the "DR" Sheave (Demountable Rim Type), designed to include two important features not heretofore found in regular stock sheaves for V-belt drives. The sheave consists of a hub on which can be mounted rims of varying diameters and number of grooves. The rims can be mounted in four different positions so that the hub can be approximately central or have varying amounts of offset as required.

These features make the sheave particularly suitable for installations requiring occasional speed or horsepower variations. The hub is mounted permanently on the motor, engine or machine shaft and the rims can be changed as often as required.

The selected range of diameters and number of grooves for "C" and "D" belts will take care of most requirements, however, in some cases it may be necessary to make a slight change in the drive ratio so as to accommodate a regular "DR" sheave, and this is generally to be preferred to take advantage of stock delivery.

A new bulletin, No. A-208 is now available which gives complete information, sizes and prices.

New Editions A.P.I. Specifications And Rosters

A revised fifth edition of "A.P.I. Standards No. 11-A, Specifications for Oil Well Pumps; Tubing Type, Sectional-Liner, and Cold-Drawn," has been published by the American Petroleum Institute's Division of Production. All revisions adopted to date by the institute's committee on Pumping Equipment have been incorporated in the new edition, including those published in the fifth supplement to the fourth edition and others subsequently acted upon at institute meetings in Los Angeles and Tulsa.

Copies are available for 75c each, with discount for quantity, at the Institute's Division of Production headquarters, 1508 Gulf States building, Dallas, Texas.

A revised printed roster of the committee on the Standardization of Rotary Drilling Equipment has been published under date of August, 1936, to replace the printed roster published under date of October, 1935. A revised printed roster of the committee on the Standardization of Steel Tanks for Oil Storage also has been published under date of August, 1936, to replace the roster dated August, 1934. This new roster indicates that W. M. Giffen of Shell Oil Company, San Francisco, is now national chairman, succeeding the late R. W. Howe, and Fritz Karge of Union Oil Company of California, Los Angeles, has become national secretary to succeed J. H. Wood, Jr., resigned.

Announcement has been made of the publication of Supplement No. 1 to the fifth edition of "A.P.I. Standards 12-A, Specifications for Standard Tanks with Riveted Shells." The supplement incorporates changes relative to steeple snaps and eccentricity of rivet heads adopted at the Tulsa meeting in May of this year.

A new revised seventh edition of "A.P.I. Standards 11-B, Sucker Rod Specifications, incorporates data on one-inch sucker rods and other changes adopted at Los Angeles in November, 1935, and at Tulsa in May, 1936.

Institute specifications for oil well pumps, rod type, sectional liner, adopted at Pittsburgh, in May, 1934, and recommended for final adoption at Los Angeles in November, 1935, have been published as the first edition of "A.P.I. Standards 11-A-1, Specifications for Oil Well Pumps —Red Type, Sectional-Liner," under date of August, 1936. Originally printed in Supplement No. 2 to the fourth edition of "Standards 11-A," and then reprinted in Supplement No. 5, the new edition includes minor changes adopted at Tulsa, in May, 1936. Copies are available from Division of Production headquarters for 50c each, with discount for quantity.

Sour Oil Tanks

Columbian Steel Tank Company has just published a 32-page illustrated book, several pages or which are devoted to the company's new Cop-Nic tanks that are designed specifically for sour oil fields. A copy of the book may be obtained by addressing the company at Kansas City. Mo.

Drilling Equipment

Chiksan Oil Tool Company, Ltd., Fullerton, California, has issued a folder describing its line of Disc Bits, Reamers, Hole Enlargers, All Steel Rotary Hose and All Steel Cement Joints. This bulletin gives full information on sizes and prices. Copies are being sent free upon request.

Diesel Engine

The Buda Company, Harvey, Illinois, has ready for distribution an interesting bulletin describing its Diesel power for generator sets. Full construction details are shown.

Explosives

E. I. du Pont de Nemours & Company, Wilmington, Delaware, recently issued an interesting booklet on "Explosives and Electric Blasting Caps for Seismic Prospecting." The booklet is well illustrated and considerable useful data is shown.

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This Week with the Industry's EQUIPMENT SUPPLIERS

Forrow on Trip for Security Engineering

E. W. (Al) Farrow, sales manager, is at present on an extended trip through the Mid-Continent and Gulf Coast oil country for Security Engineering Company. In addition to sales work in connection with the Sievers' Reamer, Farrow is checking some of the results reported on various tests of the new Security slush pump valve now being had in several areas.

Babcock & Wilcox Tube Personnel Changes

The Babcock & Wilcox Tube Company, Beaver Falls, Pennsylvania, has appointed W. W. Williams, formerly general sales manager, to general manager of the company, and T. F. Thornton, formerly sales manager of the Detroit office district, to general sales manager.

Sonneborn Made Assistant Manager of Republic Pipe Sales

R. H. Sonneborn has been named assistant manager of sales, pipe division, of Republic Steel Corporation, Cleveland, according to an announcement by N. J. Clarke, vice president in charge of sales. Sonneborn was formerly special representative and assumes the position vacated by the appointment late last year of George E. Clifford to the position of district sales manager at Los Angeles, and more recently by Charles W. East, district manager of the Houston district. Martin I. Shea will continue as the other assistant manager in the pipe division,

R. H. SONNEBORN
Assistant manager of sales, Republic Steel Corporation, Pipe Division.

which position he has held for the past eight years.

Sonneborn was born in Pueblo, Colorado, and studied mining engineering at the Colorado School of Mines. Later he studied mechanical engineering at the University of Michigan and graduated from there in 1921.

He was associated with Colorado Fuel and Iron Company in the operating department upon graduation, and later entered the sales department of Youngstown Sheet & Tube Company, where he remained until coming to Republic in January, 1936.

Merco Nordstrom Win Advertising Award

Winning first award in competition with hundreds of advertising exhibits entered by leading industrial concerns, Merco Nordstrom Valve Company of Pittsburgh and Oakland is receiving congratulations on its entry at the Fourteenth Annual Convention of the National Industrial Advertising Association which recently convened at Philadelphia. The exhibit which captured first prize consisted of a series of quadra-color inserts that have appeared in numerous trade journals featuring Nordstrom Valves. The campaign was prepared under the direction of Rodney S. Reed, Jr., advertising manager of the valve company, and was placed by The McCarty Company, advertising counsellors.

Conley in Charge for Globe At Oklahoma City

M. J. (Bud) Conley has recently been assigned by Globe Oil Tools Company to take charge of its new

M. J. CONLEY

sales and service office at 3118 South Robinson Street, Oklahoma City.

Conley will have as assistant J. B. (Jack) Stovall.

J. H. Galloway Joins Nordberg Manufacturing

J. H. Galloway, former sales manager for the De La Vergne Engine Company, is now manager of the Kansas City, Mo., office for Nordberg Manufacturing Company, designers and builders of Diesel engines and other equipment.

Forged Steel Flanges

Kropp Forge Company, Chicago, makers of forged steel flanges, have recently issued a 24-page list of stock flanges including dimension, weights, and prices on standard flanges in all sizes from ¾" to 24", and engineering data on standard flange facings, drilling templates, pressure-temperature ratings, threading standards, bursting pressures, and dimensions of standard, extra heavy, and double extra heavy pipe. Listings include standard, extra heavy, double hub and high hub boiler flanges, welding flanges and spuds, horseshoe, offset, tank and marine flanges, threaded, slip-on, van stone, welding neck and reducing companion flanges; blind flanges, etc.

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***Meet Every Requirement*—Pierce Governor outfits, complete, are available for nearly all standard industrial engines, but the Pierce Universal Governor was developed especially for automotive engines that have been converted into stationary power plants. These governors can be used on any make or model of engine. They are suitable for governing any engines used for operating pumps, welding generators, lighting generators, air compressors, hoists, etc.**

CLOSE REGULATION—Pierce Universal Governors are belt driven and either flat or V-belts may be used. The governors are of the centrifugal (or flyball) type and respond instantly to each change in engine load, maintaining a uniform speed regardless of load variation.

Because of their efficiency, Pierce Governors have been regular equipment on a majority of the standard industrial engines and on various types of industrial machines. No better governors are obtainable. Write for literature and prices.

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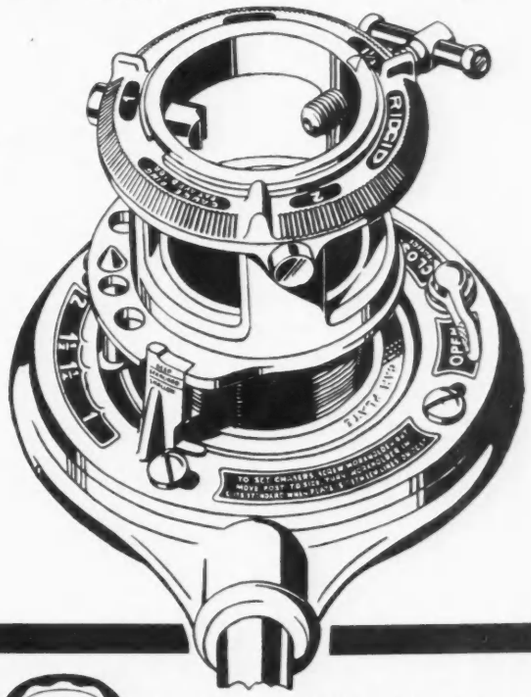

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Squeaks from the Bull Wheel

Proof

MacThistle: "Almost six dozen shoes were thrown at my wedding."

"Six dozen? I can't believe it!"

"Well, there's the shoe cupboard. Open it and count them."

Ghosts Depart

The tourist was making a tour of inspection of the very ancient-looking hotel building.

"Charming old place," he mentioned to his companion, a regular boarder.

"Yes," mumbled the other.

"They says it's haunted," went on the tourist enthusiastically.

"It used to be," replied the regular boarder, "but the management raised the prices so high the ghosts all left."

Known by His Handiwork

In a Scotch village, a cobbler, a strict teetotaler, was passing a local saloon just as the saloon-keeper was assisting a customer off the premises.

"Here, John," called the grog dispenser, "ye micht gie this chap an airm tae his hoose."

"Na, na!" replied the cobbler. "Ye should dae as I dae when I've feenished a guide job—put it in the show window."

Growing Interest

George, I'm surprised! Do you know any more jokes like that?

Yes, teacher.

Well, stay after school.

They Picked Flowers

Johnny and Mary went out into the country to pick wild flowers. Mary's mother went with them.

Ambition

You must grow up to be good. Don't you want to be looked up to?

No, I'd rather be looked around at.

Careless

"What do careless Egyptian women become?"

"Mummies."

Seeing Deceiving

"When I looked out of the window, Johnny, I was glad to see you playing marbles with Billy Simpkins."

"We wasn't playing marbles, Ma. We just had a fight, and I was helpin' him pick up his teeth."

Worms

There were two men standing on a corner whose names were Wood and Stone. A pretty girl, with short skirts, walked by and Wood turned to Stone and Stone turned to Wood, and then both turned to rubber and the girl turned into a drug store.

Moonlight and Roses

"Elmer, do you love me?"

"I'll say."

"Do you think I'm beautiful?"

"You bet."

"Are my eyes the loveliest you've ever seen?"

"Shucks, yes."

"—my mouth like a rosebud?"

"You know it."

"—and my figure divine?"

"Uh-huh."

"Oh, Elmer, you say the nicest things, tell me some more."

Worriment

A man had been visiting a certain widow every evening for some months.

"Why don't you marry her?" asked a friend.

"I have often thought about it," was the reply, "but where on earth should I spend my evenings then?"

Why Should He Mix In?

The man at the theatre was annoyed by conversation in the row behind.

"Excuse me," he said, "but we can't hear a word."

"Oh," replied the talkative one. "And is it any business of yours what I'm telling my wife?"

Artful

An Englishman was walking along a river bank in Ireland when it started to rain. Presently he found an Irishman fishing with his line under a bridge.

"Why," he asked, "have you got your line like that?"

"Sure, yer honor," replied the angler, "won't the fishes be crowdin' in out of the wet?"

Peculiar, Isn't It?

The farmer lives no life of ease,
He digs potatoes, minds his peas;
While coolies, earning paltry dues,
Must drag their rickshaws, mind their queues.
The teachers' struggle to infuse,
Combines the lore of P's and Q's.
And sextons if they would excell,
Not only toll the clanging bell;
Their negligence we'll not excuse,
Unless they tend their keys and pews.

Might Be a Gold Digger

Registrar (to youthful bridegroom): "The young lady is not a minor, is she?"

"Oh, no; she works in a beauty parlor!"

Angel

"My wife is an angel in three ways."

"How remarkable! How's that?"

"Well, first, she is always up in the air; second, she is always harping; third, she never has an earthly thing to wear."

Not Home

"Have you any children?"

"Yes, three daughters."

"Do they live at home with you?"

"No, they're not married yet."

Don't Rush Me!

Officer: "You've been doing sixty miles an hour. Don't you care anything about the law."

Lady: "Why, officer, how can I tell? I've only just met you."

JUST OFF THE PRESS

New Edition

Petroleum Dictionary

By **HOLLIS P. PORTER,** ***Member A.S.M.E.***

This new edition of PETROLEUM DICTIONARY has been much improved. Three hundred words have been defined and added. Many changes in the vocabulary of those employed in this rapidly developing industry have made additions and enlargements of the book necessary.

This book grew out of demands for some source of definitions for terms used by the petroleum industry. The first edition went into the hands of executives, engineers, students of Petroleum Engineering, manufacturers, brokers and advertising agencies. It should be in the library of every one in any way connected with, or interested in the petroleum industry.

253 pages, 330 words and terms defined. Size 6x9. Price postpaid $3.00

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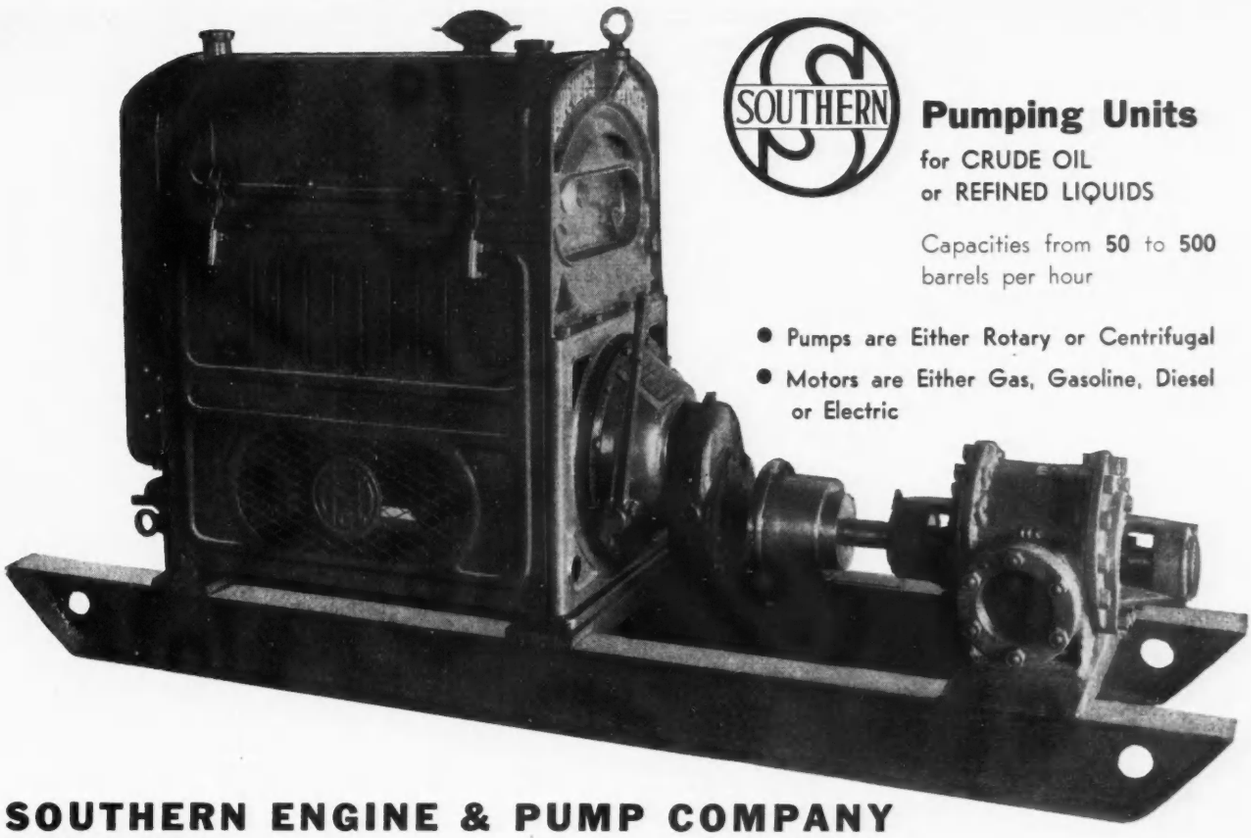

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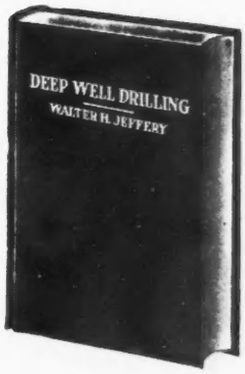

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The Gas-Air Lift Method of Producing Oil.

A. P. I. Codes.

Preparatory to writing book, the author spent weeks in a first hand study of modern methods of drilling by the rotary system, and of completing wells, controlling high pressures and operating wells in the deep fields of California and Oklahoma.

The third edition contains 816 pages, 120 more than the second edition, and 452 illustrations. Price, $6.00.

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INDEX TO ADVERTISERS

A

	Page
J. S. Abercrombie Co.	—
Abercrombie Pump Co.	130
Ajax Iron Works	—
Allis Chalmers Manufacturing Co.	—
Allsteel Products Manufacturing Co.	31
American Askania Corporation	—
American Assn. of Petroleum Geologists	—
American Cable Co.	20
American Iron & Machine Works	—
American Locomotive Co.	33
American Lubricator Co.	—
American Meter Co.	75
American Roller Bearing Co.	67
American Rolling Mill Co.	—
American Sand-Banum Co.	—
American Seismograph Co.	—
American Steel & Wire Co.	—
Ash Grove Lime & Portland Cement Co.	—
Athey Truss Wheel Co.	—
Axelson Manufacturing Co.	79

B

Baash-Ross Tool Co.	13
Baker Oil Tools, Inc.	3
Baldwin-Duckworth Chain Corp.	94
Baroid Sales Co.	73
The Barrett Co.	—
Wm. Barret, Inc.	—
The Bartlett-Hayward Co.	—
Beaumont Iron Works	—
Beaver Pipe Tools, Inc.	—
Black-Sivalls & Bryson	—
Bradford Motor Works	—
The Brewster Co.	—
Bridgeport Machine Co.	—
Broderick & Bascom Rope Co.	—
Buckeye Traction Ditcher Co.	141
Buda Co.	—
Butler Manufacturing Co.	—
A. M. Byers Co.	—
Byron Jackson Co.	41

C

Cameron Iron Works	—
Carnegie-Illinois Steel Corp.	—
Carson Machine & Supply Co.	—
The Cavins Co.	145
Chain Belt Co.	55
Chemical Process Co.	—
Chiksan Oil Tool Co.	138
Robert P. Clark Co.	147
Columbian Steel Tank Co.	—
Continental National Bank	—
Continental Oil Co.	—
The Continental Supply Co.	59
Fred E. Cooper Co.	—
The Cooper-Bessemer Corp.	107
W. F. Curlee Manufacturing Co.	—
W. H. Curtin Co.	—

D

Darling Valve & Manufacturing Co.	10
The Dayton Rubber Mfg. Co.	Second Cover
Dean Oil Tool Co.	8
De La Vergne Engine Co.	148
Demag A. G.	151
Diamond Chain Manufacturing Co.	—
David Donoghue	147
Dowell Incorporated	—
E. I. du Pont de Nemours & Co.	—

E

Eastman Oil Well Survey Co. of Texas	—
Economy Electric Lantern Co.	—
Elliott Core Drilling Co.	11
Emsco Derrick & Equipment Co.	—

F

George E. Failing Supply Co.	—
First National Bank in Dallas	—
First National Bank, Houston	—
First National Bank & Trust Co. of Tulsa	—
Fluid Packed Pump Company	—
Foote Bros. Gear & Machine Works	—
Fort Worth Clearing House Assn.	89
Fort Worth Laboratories	147
Four Wheel Drive Auto Co.	—
The Fox Rig & Lumber Co.	—
Frick-Reid Supply Co.	64-65

G

Gardner-Denver Co.	86
The Garlock Packing Co.	—
Gaso Pump & Burner Manufacturing Co.	121
Gearench Manufacturing Co.	—
General Electric Co.	76-77
L. H. Gilmer Co.	—
Globe Oil Tools Co.	—
Goodall Rubber Co. of Texas	—
B. F. Giidrich Rubber Co.	—
Goodyear Tire & Rubber Co.	—
H. P. Gott Manufacturing Co.	—
Gray-Kerotest	—
Gray Tool Co.	91
Green Head Bit & Supply Co.	—
Greene Tweed & Co.	—
The Guiberson Corp.	42-43
Gulf Envelope Co.	—
Gulf Publishing Company	16 and 152
Gulf States Utilities	141
Gustin-Bacon Co.	—

H

W. F. Hall	149
Halliburton Oil Well Cementing Co.	4th Cover
Hardway & Cathey	147
Harrisburg Steel Corp.	136
Harnischfeger Sales Corp.	117
Haynes Stellite Co.	111
Hazard Wire Rope Co.	—
C. M. Heeter Sons & Co.	—
Hercules Tool Co.	—
Hewitt Rubber Corp.	—
Hinderliter Tool Co.	—
Hoard Exploration Co.	—
Hopper Machine Works	—
The Chas. N. Hough Manufacturing Co.	153
Houston Ready-Cut House Co.	143
Hughes Tool Co.	First Cover
Humble Oil & Refining Co.	18
Hyatt Roller Bearing Co.	103
Hydril Co.	—

I

Ingersoll-Rand Co.	123
International Derrick & Equipment Co.	53
International Geophysics Inc.	—
International Harvester Co.	27
The International Nickel Co.	—
International Supply Co.	—

J

Byron Jackson Co.	41
Jarecki Manufacturing Co.	—
Jensen Brothers Manufacturing Co.	—
Johns-Manville	—
S. M. Jones Co.	—
Jones & Laughlin Steel Corp.	69
J. & S. Carbureter Co.	—

K

Kerotest Manufacturing Co.	—
Kibele Manufacturing Co.	—

L

Lamb Piston Sales Co.	—
Landis Machine Co.	—
Larkin Packer Co.	—
The Lane-Wells Co.	34
The Layne & Bowler Co.	6
A. Leschen & Sons Rope Co.	—
M. J. Lewis Oil Well Service	—
The Lincoln Electric Co.	—
Link Belt Co.	112-113
Lone Star Cement Corp.	9
Lucey Boiler & Manufacturing Corp.	85
Neal Lucey Co.	147
Ludlow Valve Manufacturing Co.	—
Lufkin Foundry & Machine Co.	Third Cover

M

MacClatchie Manufacturing Co.	—
Maintenance Engineering Corp.	133
D. S. Mair Machinery Corp.	—
Martin-Decker Corp.	—
Maloney Tank Manufacturing Co.	126
McIntosh & Seymour Corp.	—
J. H. McEvoy & Co.	—
Merchants Photo Service	—
Merco Nordstrom Valve Co.	Insert 50-51
Miller Sand Pump Co.	—
Mission Manufacturing Co.	56-57
M. K. T. Lines	—
Lee C. Moore & Co.	—
Muskogee Iron Works	—

N

National Bank of Tulsa	109
National Exploration Co.	—
The National Supply Co.	29
National Tube Co.	—
Naylor Pipe Co.	—
New Deal Specialty Co.	—
Norma-Hoffman Bearings Corp.	—
Norvell-Wilder Supply Co.	—

O

Walter O'Bannon Co.	—
Oil Center Tool Co.	5
Oil Well Supply Co.	37
Oil-World Exposition, Inc.	—
Oklahoma Portland Cement Co.	—
The Oster Manufacturing Co.	—
Otis Pressure Control	—

P

The Parkersburg Rig & Reel Co.	—
Patterson-Ballagh Corp.	119
Pelican Well Tool & Supply Co.	132
Petroleum Electric Power Club	102
Petroleum Rectifying Co.	—
Petty Geophysical Engineering Co.	—
The Pierce Governor Co.	150
Pittsburgh Equitable Meter Co.	—
Pittsburgh Steel Co.	—
Portable Rig Co.	—
Producers Supply & Tool Co.	142

R

Rector Well Equipment Co.	—
Reed Roller Bit Co.	60-61
Joseph Reid Gas Engine Co.	—
The Republic Rubber Co.	—
Republic Steel Corp.	80-81
The Ridge Tool Co.	151
Rio Pipe & Supply Co.	131
Walter Ruska & Co.	—

S

J. A. Schley	147
Schlumberger Well Surveying Corp.	14
Seismic Exploration, Inc.	—
Shaffer Tool Works	—
Shell	—
Sinclair Refining Co.	—
SKF Industries, Inc.	49
A. O. Smith Corp.	70-71
E. M. Smith Co.	—
South Chester Tube Co.	—
South Texas Geophysical Corp.	147
Southern Engine & Pump Co.	153
Southern Pacific Lines	—
Spang & Co.	—
Spang, Chalfant & Co.	93
Sperry-Sun Well Surveying Co.	12
Stanley Tools	—
Star Drilling Machine Co.	146
Stevens Hotel	142
The Sullivan Co.	134

T

Texas Electric Steel Castings Co.	15
Texas Iron Works	45
Texas Rubber Specialty Corp.	—
Texas Steel Co.	101
Thermoid Rubber Co.	4
The Timken Roller Bearing Co.	25
Tips Engine Works	—
Titusville Iron Works Co.	—
Edgar Tobin Aerial Surveys	—
Tretolite Co.	—
Trimont Manufacturing Co.	17
Trinity Portland Cement Co.	39
Trimont Manufacturing Co.	—
Tulsa Chamber of Commerce	47
Twin Disc Clutch Co.	—

U

Union Carbide & Carbon Corp.	—
Union Wire Rope Co.	—
United States Rubber Products, Inc.	—
United States Steel Corp.	—
Universal Atlas Cement Co.	—

V

Volcano Burner Co.	—

W

The Watson-Stillman Co.	—
Waukesha Motor Co.	124
Westinghouse Electric & Mfg. Co.	63
The Wheeland Co.	115
Wickwire-Spencer Steel Co.	—
J. H. Williams & Co.	148
Williamsport Wire Rope Co.	83
Wilson-Snyder Manufacturing Co.	—
Wilson Manufacturing Co.	—
Wilson Supply Company	105 and 144
WKM Co.	—
Worthington Pump & Machinery Corp.	—

Y

Yale & Towne Manufacturing Co.	—
Youngstown Sheet & Tube Co.	7

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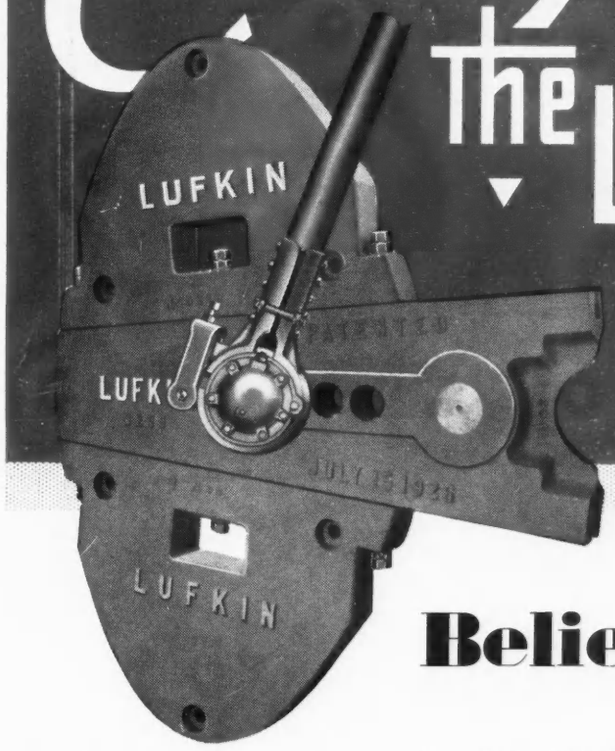

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3. Thirty minutes to one hour is *NOT* required to change counterbalance. (Only five minutes with a Lufkin-Trout crank!)
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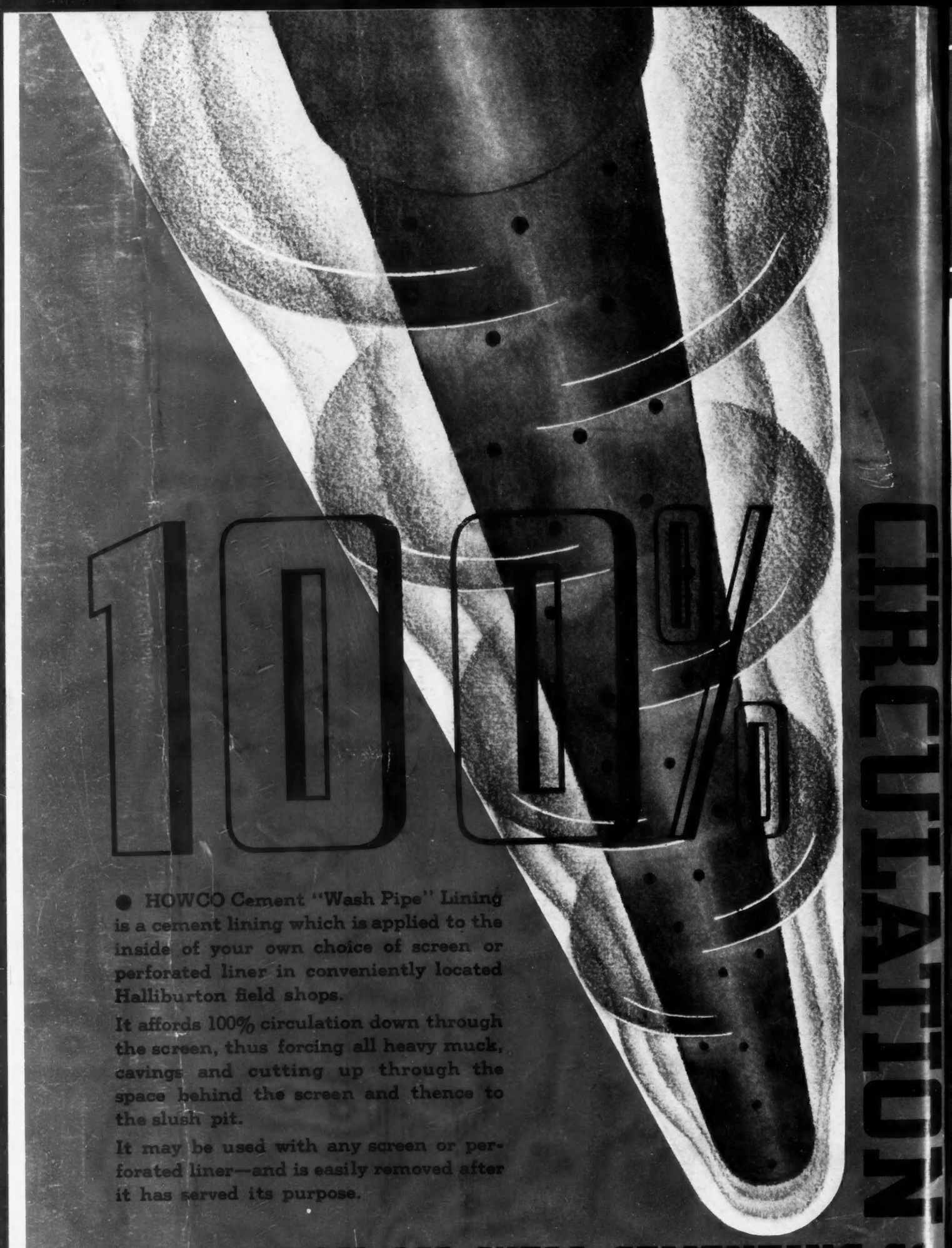

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